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## INVESTMENT, PRICES, BUDGET AND FINANCE

### PLANNING APPLIED TO MONETARY CIRCULATION

Moscow DEN'GI I KREDIT in Russian No 7, Jul 82 pp 19-24

[Article by Sh. B. Sverdlik, candidate of economic sciences: "On Planning Monetary Circulation"]

[Text] The economic press has repeatedly noted the importance of further improving the planning of monetary circulation. The need for this is determined by the fact that, in the first place, planned control still does not include such an important part of monetary circulation as reciprocal payments among enterprises and organizations for commodity-material values and services. The present planning of volumes of sold products does not fully solve the problem of balancing the monetary incomes of the suppliers of products with the monetary outlays of those who pay since neither the volume of these outlays nor their structure in the cross section of the other contracting parties is planned.

In the second place, the methods of planning the financial incomes and expenditures of the state and the monetary incomes and expenditures of the population differ quite radically from the methods for planning the social product and the national income. In the balance of the social product and the national income all substantial and value indicators are grouped according to the spheres of activity (material and nonmaterial production), and within these -- according to the economic branches;<sup>1</sup> the monetary and financial balances have no division of indicators according to spheres of activity, and the objects of planning and accounting are the ministries and departments. These and several other differences in the methods of planning the substance-value structure of reproduction and the monetary flows produced by this structure make it significantly more difficult to achieve the proper balance between incomes and their commodity counterparts in long-range accounts.

In the third place, there is no unified plan for financing and extending credit for expenditures on expanded reproduction of circulating capital and commodity supplies, which results in the appearance of certain differences in the approaches of financial agencies and banks to solving the problems of the sources for covering these expenditures. Practice shows that these issues are not always resolved in the optimal way, which sometimes leads to using credit resources for purposes that are not appropriate for credit.



The problem of balancing monetary circulation on the broad plane, which includes balancing individual monetary flows and the material flows that correspond to them, becomes especially crucial in connection with the expansion of the horizon of planning and the increased significance of social factors in the development of the economy. Under these conditions there is a stronger force of probability in the direct and reverse ties among economic and social factors in development and, as a result, methods and devices that are used successfully in annual planning turn out to be not entirely adequate or unacceptable for substantiating long-range plans. On the other hand, the limited growth of labor and material resources places new demands on methods of planning the incomes of enterprises and the population in order for financial and credit levers to have a more active influence on increasing the intensification of production. "The smoothness of the operation of all national economic units is becoming a more and more important condition for the effectiveness of the economy," noted Comrade L. I. Brezhnev at the November (1981) Plenum of the CPSU Central Committee.

In order to raise the level of the commodity-monetary balance of the plans for economic and social development, much can be done through improving the existing methods of developing consolidated monetary balances.

As one can see from recently published works<sup>2</sup>, improvement of financial planning is directed, on the one hand, toward more fully embracing all state resources in the consolidated financial balance and, on the other, toward coordinating credit and national economic plans more closely. Beginning with the 11th Five-Year Plan, the consolidated financial balance reflects the formation and utilization of financial resources not only for the state sector, as was previously the case, but includes resources of the cooperative-kolkhoz sector and public organizations. Special sections have been singled out for accounting for the increase in resources for short-term and long-term credit and credit investments.

But, in our opinion, it is impossible to fully solve the problem of commodity-monetary balance of long-range accounts on the basis of the existing system of consolidated financial plans and balances of monetary incomes and outlays of the population. The problem is that these balances have an entirely different functional purpose from that of the balance of the social product and the national income, and this dictates the peculiarities of the methodology and methods of their construction. In order to balance the material-substantial flows taken into account in the balance of the social product and the national income with the monetary flows in the consolidated financial balance, the credit balance and the balance of monetary incomes and expenditures of the population, in our opinion, it is necessary to have an intermediate document -- the interbranch balance of monetary circulation (MBDO).

The MBDO can be pictured as a sentence diagrammed with lines and columns, in which the subject is the list of subjects of monetary circulation who are recipients of money, and the predicate is those same subjects acting as payers. The figures of the line and column of any of the subjects of monetary circulation are the balance of its monetary incomes and expenditures, entered in the corresponding section. At the intersection of the line and the column one finds the monetary flow between the subject named in the predicate and the subject indicated in the subject of the sentence.<sup>3</sup>

The overall sum of incomes of a branch of material production is equal to the value of its gross output. Such an interpretation of monetary incomes is not without a certain conventionality since the gross output includes increased incomplete production and commodity supplies which have still not undergone the transformation T - D. This increase is taken into account in the diagonal sections along with intrabranh circulation, that is, with reciprocal payments of autonomously financed subdivisions of the branch.

Another conventional aspect of calculations of indicators of the MBDO consists in that we are abstracting from the lack of correspondence of time periods of the arrival of materials to the warehouse (allocation of wages and so forth) and the time periods for the payment for these materials (or payment of wages). In macro-economic calculations for the long-range future it is necessary to abstract from many particulars which are sometimes of no small interest in current and daily economic activity. Is this the way one should guess the credits and debits of branches of the national economy for 5 years into the future, the more so since for the national economy as a whole these are equal to zero?

In the current practice of accounting the payments of subject A to subject B in a given period, as a rule, are not equal to the incomes of subject B from subject A. The difference lies in the account for interbranch circulation of the USSR State Bank. If one were to follow the practice precisely it would be impossible to construct a matrix balance of monetary circulation since one cannot place any concrete sum at the intersection of the column of the payer and the line of the recipient of the money, that is, one cannot join the monetary operations of the payer and the recipient into a single monetary flow. To do this it would be necessary in principle to resolve the problem of who is the owner of the money on the path from the payer to the recipient. According to the scheme of the MBDO, this money belongs to the recipient since the bank gives him credit backed by accounting documents that are on the way which will definitely be repaid upon receipt of the awaited payment.

Incomes of autonomously financed service branches (passenger transportation, communications which serve the population, municipal services, domestic services, entertainment enterprises), according to the conditions of the MBDO model, are equal to the expenditure of the population to pay for the services of these branches; incomes of science are represented by the sum of revenues from clients under economic agreements and also budget allocations for the maintenance and development of scientific institutions that are not autonomously financed, which are interpreted as payments for services of a statewide (interbranch) nature. Thus the MBDO reflects the monetary incomes of all autonomously financed enterprises and organizations of branches of material production and the nonproduction sphere.

Expenditures of the aforementioned autonomously financed subjects include payments for commodity and material values for simple or expanded reproduction. On the line "population" one accounts for expenditures of autonomously financed subjects to pay for the wages of workers they employ.

Let us pay attention to two peculiarities of the methods of compilation of the MBDO.

The first consists in that expenditures of branches that handle commodities (trade, procurements, supply) are determined by the volume of their outlays on circulation, capital expenditures and increased material supplies, and their income is the sum of cash from sales.

Thus the MBDO has no monetary flows that reflect the participation of the aforementioned branches for purposes of moving the goods from the producers to the consumers.

The following approach to registering in the MBDO the participation of commodity-handling branches in the monetary circulations seems the most acceptable to us. It provides a link between the indicators of this balance and the indicators of the balance of the national economy and at the same time makes it possible to take into account the influence of commodity-handling branches on the volume and structure of monetary circulation. This is clear from the following conventional example.

Producer A has sold commodity-handling organization B products worth a sum of 1,000 rubles, and B has sold 900 rubles' worth of the products received from A to consumer C. In the MBDO subjects A and C will correspond with each other in the amount of 900 rubles, and the 100-ruble value of increased commodity supplies will figure as a monetary flow between B and A. In the final analysis the sum of incomes of A and expenditures of C are equal to their actual incomes and expenditures, and the account of C has reflected the remainder of expenditures and incomes from the commercial operation under consideration.

Any other solution is fraught with possible complications. Say that we have decided to reflect in the MBDO the retail commodity turnover in its full volume. In this case the column "Trade" would take into account the payments of this branch to branches of material production according to the categorization of the goods coming from them, and the line would reflect the overall sum of revenues from the population. Thus the structure of expenditures on the purchase of commodities through retail trade becomes undifferentiated. In order to reflect this structure it would be necessary for trade to open a multitude of accounts in the interbranch balance in keeping with the number of branches of material production that deliver to it goods for private consumption. The interbranch balance becomes more difficult to grasp and it becomes more difficult to use mathematical methods for analyzing it.<sup>4</sup>

The second peculiarity pertains to the methods of determining the incomes and expenditures of the population. Incomes of the population include the value of products obtained from kolkhozes in payment for labor and the net output of owners individual subsidiary farms, cottage industries and so forth, and expenditures equal the value of the part of this output that is consumed by the population. On the other hand, the MBDO does not include incomes from the sale of agricultural products from individual subsidiary farms to procurement and trade organizations or the kolkhoz market, or the expenditures of these enterprises on the acquisition of means of production from organizations and enterprises of the public sector. It has been proved that an expanded interpretation of incomes and expenditures of the population in the MBDO does not violate the numerical ratio among their volumes -- increased savings of the population (in all forms) in the MBDO are equal to this increase in the balance of monetary incomes and expenditures of the population compiled according to the schema that is presently in effect.<sup>5</sup>



All the MBDO indicators considered so far have been obtained through the corresponding regrouping of the indicators of the interbranch balance of the social product. But this balance does not reflect the process of redistribution of the national income in monetary form, mediated by financial and credit flows, which is the main obstacle to coordinating its indicators with the indicators of the consolidated financial balance of the state and the balance of monetary incomes and expenditures of the population.

In the MBDO this problem is resolved in the following way. They have introduced a column titled "financial-credit system" whose indicators characterize centralized state expenditures. In our example centralized state expenditures consist of expenditures (material and labor) on the maintenance and development of branches of social and cultural services that are not autonomously financed,<sup>6</sup> expenditures on the maintenance of the unemployed population (pensions, stipends, grants) and so forth.

The line "financial-credit system" has a quite different purpose and content. It takes into account the amounts by which incomes of subjects of circulation exceed expenditures (or the opposite with the sign "-"). Let us recall that under the conditions of the interbranch balance, monetary expenditures include all expenditures (material and labor) on simple and expanded reproduction, and, consequently, the sum indicated on this line characterizes the net remainder of the interrelations of the given subject with the financial-credit system and the volume of monetary funds it has deposited into the centralized fund for redistribution of state financial-credit resources or has received from it.

In order to illustrate the economic content of the monetary flow of an autonomously financed subject accounted for on the line "financial-credit system," let us consider the following conventional example.

1. Deposits into the budget of profit and turnover tax, deductions for social security and other payments on an equal footing (for maintenance of branches that are not autonomously financed and so forth)	1,000
2. Payments into the budget for imported products	100
3. Conventional net output sent to the fund for financing capital expenditures on increasing fixed capital, reimbursement for its removal and capital repair, and increased incomplete construction	500
4. Conventional net output deposited in the fund for circulating capital (not including incomplete construction)	50
5. Capital expenditures	750
6. Increased material reserves	100
7. Net payments to finance-credit system (1 + 2 + 3 + 4 - 5 - 6)	800

In turn, the difference between capital expenditures and conventional net output that is deposited into the fund for financing these expenditures (that is, the indicator 5 minus the indicator 3) is equal to the following.

8. Increased indebtedness from loans for capital expenditures	+70
9. Increased residual monetary funds in bank accounts for financing capital expenditures	-50
10. Income from the financial system for augmenting the fund for capital expenditures	+130
11. Difference between capital expenditures and sources of financing them from conventional net output (8 - 9 + 10)	+250

One interprets correspondingly the difference between the increase of material reserves and internal sources of financing this increase (6 - 4).

12. Increased indebtedness on loans for commodity and material values	+120
13. Increased residual of monetary circulating capital (money in current accounts, funded locally and centrally, and cash on hand)	+40
14. Income from financial system for augmenting circulating capital fund	-30
15. Difference between increased reserves and internal sources of financing them (12 - 13 + 14)	+50

The sample calculations given above show the schema for changing over from the consolidated indicator of "net" payments of subjects of the financial-credit system to a developed system of indicators that correspond to indicators of financial and credit balances. Such an expansion can be made with the agreement of the financial agencies and the banks after calculating the consolidated volume of "net" payments with the MBDO model based on the expected growth of financial (indicators 1 and 2) and credit resources (indicators 9 and 13).

Incomes of the financial-credit system from the population include both mandatory payments and the increase in savings. The total can be obtained with the following calculation (conventional units):

16. Payments from the population into the state budget (with the exception of payments on loans)	15.0
17. Difference between insurance payments and outlays for property insurance	0.5
18. Total mandatory payments and nonreturnable deposits (16 + 17)	15.5
19. Increase of deposits into savings banks and the Gosbank	6.0
20. Difference between incomes and payments for state loans	0.5



21. Difference between insurance payments and outlays for personal insurance	1.0
22. Increase in long-term loans to the population	0.1
23. Total increase in state indebtedness to the population (19 + 20 + 21 - 22)	7.4
24. Incomes of financial- credit system from the population (18 + 23)	22.9

Let us look at some results. The proposed MBDO plan reproduces transformed all the main indicators of the interbranch balance of the social product and includes all the main financial-credit flows which mediate the distribution and final utilization of the conventional net output. Thus we have achieved the goal we set of obtaining a document whose indicators, on the one hand, are strictly coordinated with the indicators of the material-substantial and value structure of the social product and, on the other, which shows in pure form (that is, without accounting for counterflows between production and the financial-credit system) the volume of monetary resources of the state and the population and also the proportions of their redistribution.

There arises the question of whether it is possible to draw up a planned interbranch balance of monetary circulation and what its role will be in improving the balance of economic growth.

In our opinion, there are quite realistic prospects of developing an MBDO for the five-year plan with an annual breakdown. The fact is that it is precisely for these time intervals that we presently develop the consolidated state financial balance, the balance of monetary incomes and expenditures of the population and, as an experiment, the interbranch balances of the social product. It now remains to regroup the indicators of the aforementioned planning balances according to the given algorithm (which, incidentally, can be done by an electronic computer) and then try to enter these figures into the plan of the MBDO. A consolidation of information from various sources, which seems simple at first glance, will make it possible to reveal certain discrepancies, lack of coordination and so forth, which are brought about by various factors of a methodological, informational and technical nature. The next stage will be an analysis of the causes of the discrepancies, certain steps toward reaching an acceptable solution, an adjustment of the initial plans for the structure of the social product, state financial resources and monetary resources of the population, and the selection of a variant which takes into account the actual capabilities of production and the interests of strengthening monetary circulation. In this stage one will reveal and eliminate many discrepancies and disproportions which, in a number of cases, are also revealed during the course of the implementation of established plans.

To check on the coordination of material-substantial and monetary flows is only the first and simplest function of the MBDO. For more complete utilization of the potential analytical possibilities of this document, it is necessary to create a normative base for long-range calculations of coefficients of monetary expenditures per unit of output and work.

The coefficients of direct monetary expenditures of the branch in the report MBDO are calculated as the ratio between particular monetary expenditures and the overall sum of income. For example, if the monetary income of heavy industry amounts to 300 billion rubles, payments from this branch to light industry are 3 billion, and expenditures on wages are 45 billion rubles, then the coefficient of direct monetary expenditures of heavy industry to pay for products of light industry is  $3 : 300 = 0.01$  and to pay for labor --  $45 : 300 = 0.15$ , and so forth.

The development of technically and economically substantiated long-term coefficients of direct monetary expenditures is, as we know, a command of the time. Long-term normatives of wages per ruble of output are being developed and introduced. Beginning in 1983, the five-year and annual plans of industrial, construction and transportation ministries, associations, enterprises and organizations, as we know, will include assignments for production (work) costs, and they will include a limit (maximum level) of material expenditures in monetary terms per ruble of output (work). If these normatives and limits are based on the achieved level for all products as a whole, in the drafts of the plan the enterprises and ministries will be able to exaggerate the influence of so-called cost-increasing factors and understate the influence of those that decrease costs. This is eloquently shown by the experience in planning expenditures per ruble of commodity output; the established normatives account for many enterprises that allow large nonproductive losses of embodied and live labor, and also purely financial losses from the payment of fines and penalties.

The development of normatives of wages, material expenditures and the entire production cost that are average for the ministries and enterprises should be based on progressive individual normatives for the most important kinds and groups of items. These individual normatives will make it possible to correctly adjust the amount of the average normative in cases where objective factors make it necessary to make changes in the five-year and annual structural (assortment) plans and also when these plans are not fulfilled because of the poor discipline of executives in the struggle for an advantageous assortment.

The coefficients of direct monetary expenditures include the aforementioned normatives and are a further development of the system of value normatives which is necessary for improving the planning of monetary circulation in the future. The existence of such a system (it is called the matrix of coefficients of direct monetary expenditures) makes it possible to formalize the algorithm of the development of the MBDO, to transform this balance into an economic-mathematical model which is understood by electronic computers and, because of this, to reduce labor-intensiveness and to increase the reliability of accounts of monetary circulation.

It should also be emphasized that the coefficients of direct monetary expenditures correspond to coefficients of direct material expenditures and coefficients of direct labor expenditures which are used in developing the corresponding interbranch balances for the future.

Let us say that there is a matrix of coefficients of direct expenditures for some year of the forthcoming five-year plan and several variants of plans for the gross output of branches of services and science, and we also know the proposed volume

of centralized state expenditures on wages of workers in branches that are not autonomously financed and on the maintenance of the unemployed population. These data are sufficient to calculate on the basis of the corresponding mathematical program the structure of income and expenditures of all subjects of circulation, the volume and structure of centralized state expenditures and the volume and structure of income of the financial-credit system, that is, these data are enough to draw up a plan MBDO. Let us note that existing mathematical programs make it possible to carry out this task also when the initial data have been determined for 200-300 subjects of circulation. From the data of the MBDO it is possible to calculate the coefficients of the complete wage-intensiveness of products of individual branches.

Let us say that the gross income of the food industry was 100 billion rubles and the direct wages of workers employed in this branch were 5 billion rubles. Consequently, the coefficient of direct monetary expenditures on wages was 0.005. The monetary expenditures of the food industry to pay for means of production included wages of workers of other branches -- the suppliers of material goods and services. We shall arbitrarily say that the food industry paid agriculture 50 billion rubles, the coefficient of direct monetary expenditures on wages in agriculture is 0.5, and, consequently, in the expenditures of the food industry to pay for agricultural products embodied labor accounted for 25 billion rubles. In turn, for every ruble's worth of agricultural products there are 20 kopecks of expenditures on heavy industry products -- 10 billion rubles, of which wages took 2 billion rubles. In the final analysis, taking into account only the aforementioned interbranch ties, for all the products sold by the food industry expenditures on wages amounted to 32 billion rubles ( $5 + 25 + 2$ ). And if one were to take all interbranch ties into account, according to our calculations, the coefficient of complete expenditures on wages for products of the food industry would be 0.47, and for products of light industry -- 0.15.

The coefficients of complete expenditures on wages (complete wage-intensiveness) characterize the influence of the branch structure of public production of material goods and services on the formation of monetary incomes and expenditures of the population. Of course in a socialist economy the "advantageousness" of the assortment of goods from one standpoint or another should not be a point of departure for the formation of the structure of production of consumer goods, but it is useful and necessary to take the influence of the structure on the incomes and outlays of the population into account.

As was pointed out above, it is expedient to use the MBDO in calculations for a period of no more than 5 years, because of the lack of reliable methods of predicting the coefficients of direct monetary expenditures for a longer period. In the long-range plans for economic and social development of the USSR during the next 10 - 20 years it is sufficient, in our opinion, to confine ourselves to an overall estimate of the volume of state financial resources and monetary resources of the population and balance them with indicators of the utilization of the conventional net output. These tasks can be carried out with a consolidated balance of incomes and expenditures in material production, the nonproduction sphere, the state and the population.

Let us consider one of the possible approaches to constructing such a consolidated balance using conventional data.

First we draw up the balance of the conventional net output.

National income used for consumption and accumulation	170
<u>Amortization of fixed production capital</u>	<u>20</u>

Total	190
-------	-----

Private consumption <sup>7</sup>	110
Material expenditures in the nonproduction sphere <sup>7</sup>	12
Capital expenditures	60
Growth of circulating capital, supplies, reserves and other expenditures	8

Total	190
-------	-----

Utilized national income, broken down according to value:

for primary incomes of workers	94
for primary incomes of enterprises	76
Of the overall sum of capital expenditures	60
Financed by the state	58

by the population (for individual and cooperative housing construction)	2
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Balance of incomes and expenditures in the nonproduction sphere is characterized by the following data:

Incomes for paid services to the population	8
State financing of branches of social and cultural services that are not autonomously financed	26

Total	34
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Current material expenditures	10
Wages of workers	20
Amortization of fixed capital of autonomously financed service branches	2
Net income of autonomously financed service branches	2

Total	34
-------	----

Let us say that payments from the population to the state amounted to 8, and increased savings of the population in savings banks and the Gosbank, in state loans and personal insurance -- 5.

On the basis of the above data we can draw up the balance of incomes and expenditures of financial resources (billions of rubles):

Primary incomes of enterprises of material production	76
Amortization of production capital	20
Net income of autonomously financed service branches	2



Amortization of fixed capital of autonomously financed service branches	2
Payments of the population	8
Increase in savings of the population	5

Total	113
-------	-----

Maintenances of branches of social and cultural services that are not autonomously financed	26
Maintenance of unemployed population	19
Capital expenditures	58
Increase in circulating capital, supplies, reserves and other expenditures	8

Total	113
-------	-----

Now one must calculate the balance of incomes and expenditures of the population (billions of rubles):

Incomes of workers in branches of material production	94
Incomes of workers in branches of the nonproduction sphere	20
Incomes of unemployed population from the state	19

Total	133
-------	-----

Expenditures on private consumption	110
Capital expenditures	2
Expenditures to pay for services	8
Payments to the state	8

Total	128
-------	-----

Increase in savings	5
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The relative simplicity of the methods of drawing up the report consolidated balance of incomes and expenditures should not conceal the complexity of the problem of developing this balance for the long range. What should be the ratios between the primary incomes of the workers and the primary incomes of the enterprises, between paid and nonpaid services? What is the permissible proportion of the increased savings of the population in their monetary incomes and in the financial resources of the state? A consideration of these and other problems which inevitably arise when attempting to predict monetary relations in the national economy in close connection with the process of reproduction goes beyond the scope of the present article. There is no doubt that an expansion of the area of quantitative analysis of these ties both in retrospect and in planning calculations will provide an impulse for further concretization of the theoretical developments regarding the role of money and monetary circulation in the stage of developed socialism and will be a social order for scientists and practitioners engaged in the methodology and methods of planning the financial and monetary aspects of the growth and balance of the Soviet economy.



Any economic-mathematical models of economic processes are poorer than the real processes in all their multiplicity of direct and reverse ties. Yet economic-mathematical models have one advantage: with them it is possible to "play out" various variants of development, and this playing out replaces in economic sciences the physical experiments that are used by representatives of the natural sciences for testing one hypothesis or another. Monetary relations are a sphere of activity in which carrying out experiments that have not been thought through to the end can cause irreparable damage. So economic and mathematical models can and should play a large role here.

#### FOOTNOTES

1. In the interbranch balance of the social product — for pure branches.
2. See, for example: Pavlov, V. S. "Perspektivnoye finansovoye planirovaniye" [Long-Range Financial Planning], Moscow, Finansy, 1980.
3. The methods for constructing this balance and the sources of information are described in detail in the author's book "Obshchestvennyy produkt i denezhnyy oborot" [The Social Product and Monetary Circulation], Novosibirsk, Nauka, 1981.
4. We shall return to this aspect of the problem later.
5. Proof of this equation is presented in the book: "Obshchestvennyy produkt i denezhnyy oborot, pp 51-52.
6. Although in practice some of these expenditures are covered by deductions from the net fund of autonomously financed branches directly, bypassing the state budget.
7. Not including wear and tear on fixed capital.

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## INVESTMENT, PRICES, BUDGET AND FINANCE

### NEED FOR COORDINATION OF BANK, SUPPLY AGENCY WORK STRESSED

Moscow DEN'GI I KREDIT in Russian No 4, Apr 82 pp. 39-44

[Article by Prof M. M. Yampol'skiy: "Coordination of Work of Bank and Supply Agencies"]

[Text] An important task was set at the 26th CPSU Congress and the November (1981) Plenum of the CPSU Central Committee: to provide for more efficient utilization of material, of labor and financial resources. The credit system is called upon to play an important role in carrying this task out successfully. It has extensive possibilities of influencing economical utilization of material and financial resources in credit and accounting operations.

An important area for increasing the effectiveness of the influence of the credit system on efficient utilization of resources can be further improvement and closer, immediate coordination of the extension of credit and accounting with the processes of movement and formation of supplies of materials that are envisioned in the plans. The urgency and significance of such areas of further improvement of the organization of extending credit and accounting, and also increased bank control over the observance of planning discipline in the movement of commodity and material values and the formation of supplies involved the following.

At the present time the enterprises and organizations have accumulated large non-planned supplies of material values which, when brought into circulation, are a significant reserve for improving the utilization of material resources in the national economy. The formation of increased supplies of materials takes place mainly because they are acquired in volumes that exceed the actual needs. Some of the materials that are brought in in excess of the needs are used by the enterprises for reciprocal sales. Bringing in surplus materials and repeatedly trading in them among enterprises are essentially non-planned operations which cause no small amount of harm to the national economy (additional expenditures for moving the materials, artificial shortages of certain kinds of materials and so forth). The elimination of such shortcomings is no small reserve for economical utilizations of material resources and monetary funds.

The enterprises use various forces to form non-planned supplies of commodity and material values. The largest of them is credit, a considerable part of which forms above-planned production supplies. It should be emphasized that the use of credit

as a source of funds for forming above-planned supplies began with free granting of loans to enterprises for the payment of values they had acquired, regardless of whether or not they actually corresponded to the need determined by the plan.

In particular, such a situation is found when credit is extended for the turnover of material values and expenditures on wages, and also when payment credits are granted. This results in subsequent increased indebtedness in the special loan accounts (when credit is extended for circulation), in amount in excess of the established control figures for credit, or else in the regular utilization of payment credits.

This shows that the effectiveness of bank influence on improving the utilization of material resources depends largely on the establishment of a closer dependency between the amount of loans granted to pay for values that are acquired and the corresponding planning indicators of the activity of the enterprises. The coordination of such credit and accounting operations with the plan would limit the possibilities for the enterprises to use money for non-planned investments and would contribute to reducing the amount of supplies and bringing materials from above-planned supplies into economic circulation.

Attention is drawn to the fact that it is precisely the bank, which does a large amount of work for reducing the amount of residual commodity and material values, which itself grants funds to the enterprises for the formation of increased supplies.

It should also be kept in mind that such negative phenomenon as increased acquisition of materials, the formation of above-planned supplies and operations for reciprocal sales of materials by the enterprises are related primarily to the various peculiarities of the organization of supply for enterprises and cannot be attributed solely to shortcomings in the work of bank institutions, although the activity of the bank still prevents this only to a limited degree.

Therefore the necessary measures for improving credit and accounts in this direction can be implemented in connection with changes in supply operations.

At the present time control over the amount of supplies of materials at the enterprises and the application of measures for reducing these supplies are carried out by bank institutions without the necessary coordination with supply organizations, which reduces the effect of the bank's influence on reducing the supplies. Therefore an important area for increasing the role of credit institutions in reducing the supplies is coordination of the bank's activity primarily with supply agencies.

When determining ways of eliminating these shortcomings one should keep the following in mind. On the whole, with existing conditions for the organization and planning of material and technical supply, there are real prerequisites and possibilities for increased (as compared to the actual planned need) acquisition of materials by the enterprises. For its part, the bank, because of a number of reasons, cannot limit the acquisition of materials to the planned need when carrying out credit and accounting operations.

In this regard the most important thing is that, when planning the need for materials, including allotting funds for material resources, one uses only reciprocal indicators and value indicators are not applied. This limits the possibility of coordinating

the planned volume of acquisition of materials the main indicators for the operation of the enterprises which determine the need for materials (production costs, expenditure of materials according to the estimates for production). As for the bank, such conditions essentially limit the possibility of granting each enterprise credit to pay for materials that are acquired only within the limits of the planned need for them. This is brought about by the fact that the volume of supply of materials that is planned for each enterprise (and the bank is oriented toward the established plans and agreements that are concluded) is not coordinated with the planning indicators for production in terms of value. Also of essential importance is the uncoordinated allotment by various agencies (ministries, Gosplan and others) of funds for individual kinds of materials (products lists that are issued by the Gosplan, Gosplan and so forth). Under these conditions the funds are allotted without accounting for the need for these resources. Consequently there is no coordination of the total volume of all types of funds that are allotted and the overall need of individual enterprises for materials. There is a similar lack of coordination in the deliveries of various kinds of materials by specialized supply and sales organizations (administrations of the supply and sales organization for metals, chemicals). The volume of deliveries from each of these organizations is not coordinated with the volume of deliveries from other organizations or with the enterprise's total need for materials. Hence the bank, naturally, does not have a real possibility of making accounting and credit operations correspond to each enterprise's actual need for materials.

These shortcomings can be eliminated through the joint efforts of bank institutions and material and technical supply agencies. The necessary basis for the coordination of their activity can be the value indicators of the need of individual enterprises for materials, including indicators stipulated by the decree of the CPSU Central Committee and the USSR Council of Ministers, "On Stepping Up Work for Economical and Efficient Utilization of Raw Material, Fuel and Energy and Other Material Resources," of 30 Jun 1981. This decree established that, beginning in 1983, a limit (maximum level) of material expenditures will be introduced into the practice of planning as part of the assignment for the production cost of products. The availability of these initial data makes it possible to determine the planned value volume of the supply of material for individual enterprises. Data concerning the planned volume of expenditures of materials according to production estimates can be used equally as a value indicator of the enterprise's total need for materials.

Relying on these data, divisions (administrations) of material resources and balances of the Gosplan of the union republics and the main territorial, material and technical supply administrations have an opportunity to coordinate the volume of funds allotted and the deliveries of material resources with the enterprises' total need for materials.

Such coordination means achieving balance of a plan for supply and plans for production in physical and value terms for individual enterprises. Experimental application of this policy, which attributes to the achievement of balance in plans for supply and production, was begun by the Moscow and Odessa main territorial administrations for material and technical supply of the USSR Gosplan beginning in 1981 for a group of enterprises.



On the basis of the application of value indicators of the volume of material resources allotted to enterprises one can coordinate the activity of bank institutions with that of supply agencies. This coordination can pertain to acquisition and reciprocal sales of materials by enterprises as well as the amount of the supplies. Here we have in mind an exchange of information between supply agencies and bank institutions, and also the application of agreed-upon measures directed toward coordinating the acquisition of materials with the planned need for them, normalization of the amounts of supply and regulation of operations for non-planned delivery of materials by the enterprises.

As for the planned volume of acquisition of materials for each enterprise, the coordination with the need for materials according to the production plan can be carried out by the main territorial administration of the USSR Gosplan which should be given the necessary information. After making sure that the acquisition of materials planned for the enterprise (in value terms) corresponds to the planned need (from the estimate of production expenditures), these agencies could notify bank institutions of the total amount of acquisition of materials by individual enterprises for the planned period.

Such checking can be done by Gosplan agencies at various stages of planning the volume of deliveries of materials, including from data from orders for the necessary materials, supplies that have been allotted and data about the specific needs for material. But the Gosbank institutions need only data concerning the volume of funds allotted (in value terms) or the total value of materials for a specific need. These are the data that can be given to bank institutions.

Planned value indicators of the volume of acquisition of materials that are balanced with indicators of the need for them according to the production plan for individual enterprises can serve as initial data for coordinating the sum of credit granted by bank institutions to pay for materials with the planned need for them.

Of course, plans for acquisition and the need for materials which are balanced with the participation of supply agencies can serve as a fairly reliable basis for granting credit to pay for materials that are acquired in keeping with the supply plan. But this does not provide a full guarantee of strict correspondence between the actual acquisition and the planned need for materials. This lack of correspondence is possible because of a number of reasons, including as a result of changes in the assortment and time periods for the delivery of materials to the consumers because of adjustments in the production plan and also as a result of reciprocal non-planned sales of materials by the enterprises. Therefore there is still a need for independent control on the part of bank institutions over the correspondence between the actual acquisition of materials (and payment for them) and the planned need.

Deviations from the plan can be revealed by comparing the actual payment for acquired materials with the planned volume of the need for them. If it is established that such deviations are substantiated, the bank institutions can refrain from extending further payment credits. In cases where there is no adequate substantiation for increased payment for materials, the credit payments can be stopped or further credits can be granted under stricter conditions (increased interest), including the acceptance by the enterprise of certain commitments to normalize the acquisition of materials.



It would be expedient for bank institutions to inform divisions (administrations) for material resources and balances of the main territorial supply administrations about all deviations of the actual acquisition of materials from the plan. It is necessary to provide this information in order to coordinate the efforts of bank institutions and supply agencies in the interest of normalizing the volume of acquisition of materials and the amounts of supplies at the enterprises. In particular, these supply agencies, on the basis of the information they have obtained, could take the necessary measures to adjust the volume of deliveries of materials to the consuming enterprises. Of course, they should notify bank institutions about the measures they have taken. Such joint coordinated influence of supply agencies and bank institutions would contribute to coordinating the acquisition of materials with the actual need for them and would avoid inexpedient utilization of material resources in the national economy.

The coordination of the efforts of supply agencies and bank institutions could be of no small significance for reducing supplies of materials at enterprises. This pertains mainly to the composition of the information they use. Thus supply agencies have data from the accounts of enterprises which give information about the amount of supplies only of individual kinds of materials (in physical terms) but these agencies do not have figures on the total volume of supplies of materials (in value terms), about the amount of residuals of incomplete production, and so forth.

As for the bank institutions, they have data only about the total amount of supplies of materials (in value terms) and also other residuals, but not about the composition of the supplies. Therefore bank institutions can discover surplus residuals of individual kinds of materials only by inspecting the supplies on hand at the enterprises themselves.

All this shows the expediency of providing more complete information about the amount and composition of supplies both to supply agencies and to bank institutions. Without this information the influence of these organizations on the normalization of the amounts of supplies is limited and weakened. The following corroborates this. The Moscow City Gosbank office periodically notifies the Moscow main city administration for material and technical supply of the Gosplan of data concerning the condition of supplies, including the amount of above-normative noncredited residuals for the various enterprises of Moscow. These figures are used by supply administrations in order to place demands on the enterprise to reduce residuals and, in a number of cases, even to reduce the volume of deliveries correspondingly.

Yet the coordination of the activity of even these organizations is extremely limited and it does not go beyond allowing Gosplan agencies to obtain information from bank institutions. Apparently a reciprocal exchange of information among these organizations is needed. In particular, it would make sense to establish a policy whereby Gosplan agencies informed bank institutions about excess supplies of individual kinds of materials at the various enterprises. The fact is that material and technical supply agencies can determine the amounts of these supplies more competently than bank institutions can. Bank institutions, as we know, do not have data on the normative amount of residuals of individual kinds of materials.

A regular exchange of information between supply agencies and bank institutions concerning the amounts of supplies of materials would make it possible to achieve coordination of the influence of these organizations on reducing above-planned supplies, and bank institutions could have better justification for refusing to grant loans to pay for materials that are acquired in cases where the enterprises have surplus supplies of these materials.

On their part, supply agencies could also take the necessary measures for reducing supplies at enterprises and preventing a possible increase in these supplies in the future.

An independent area of the coordination of the work of supply and bank agencies could be their joint influence on reducing the supplies when the bank extends credit for above-planned residuals of commodity and material values under credit agreements. One of the requirements for credit for these residuals would be the adoption by the enterprises of realistic measures for reducing the residuals for which credit has been extended through utilizing them in production or selling them outside during the course of the year.

If a particular enterprise can reduce supplies by utilizing them in production without coordination of the activity of bank institutions and supply agencies, this coordination is necessary if this enterprise reduces residuals of commodity and material values by selling them outside. In this case it is expedient for the territorial supply agencies to inform the bank institution about the composition and volume of the commodity and material values which the enterprise intends to sell outside. This is necessary in order for the supply agencies to evaluate the feasibility of the earmarked sales and also for a possible acquisition of materials by supply agencies so that enterprises in the zone of activity of these agencies can utilize them more efficiently.

In other words, this coordination is useful for increasing the substantiation of the decisions that are made concerning extending credit for above-planned residuals, since then it becomes possible to evaluate more realistically the measures earmarked by the enterprises for reducing supplies. On the other hand, it is also necessary for more expedient utilization of material resources and reduction of outlay for redistributing them to consumer enterprises. This is possible, in particular, because of the fact that operations for bringing material resources from above-planned supplies into economic circulation are included in the sphere of statewide administration through the system of supply agencies.

A great deal of attention should be given to the possibility of coordinating the activity of supply agencies and bank institutions when exercising control over reciprocal non-planned deliveries of materials by the enterprises. Such operations have become significant in their scope. Thus in a group of enterprises that were investigated, the sales of materials amount to 5-8 percent of their expenditure for production needs. These non-planned sales are essentially mediated by credit and accounting operations without any obstacles.

The condescending attitude of higher agencies of the enterprises, supply and sales organizations and also bank institutions frequently contributes to the great expansion of operations for non-planned sales of materials. This is manifested in the fact that the ministries which have jurisdiction over the enterprises that sell the materials react complacently to cases of the delivery to other enterprises of materials that have been allotted from the funds. Gosplan agencies also fail to intervene in operations for delivering materials from the enterprises; as was noted above, bank institutions perform credit and accounting operations for non-planned sales of materials. Consequently, these operations are essentially unsupervised and uncontrolled.

Such an attitude toward these operations is brought about largely by their apparent usefulness, which consists in that, as a result of them, certain enterprises sell surplus materials while others obtain resources which they need. In other words, because of these operations one eliminates shortcomings in the organization of supply and improves the provision of material resources for the enterprises. But one cannot fail to see the negative consequences of non-planned sales of materials, which when they are carried out unimpeded, on the one hand stimulate surplus acquisition of materials by the enterprises in order to sell (exchange) subsequently, and on the other hand, this contributes to the accumulation of increased supplies and causes additional outlays for repeated redistribution of materials among the enterprises.

Consequently, non-planned sales of materials is accompanied by inefficient utilization of material resources and monetary funds.

The negative consequences of operations for sales of material by the enterprises and also the significant volumes of these operations point out the expediency of including them in the sphere of planned regulation and control, including control on the part of bank institutions. A significant influence on reducing non-planned sales of materials can be exerted by measures for coordinating the plan for supplying enterprises and the plans for production on the basis of the application of value indicators of the need for materials, as was noted above. Such measures are important because they make it possible to reduce the acquisition of materials and relieve the enterprises of resources for non-planned sales. This circumstance is of essential significance since most of the materials that are sold by the enterprises are at their disposal because of their acquisition in quantities that exceed their actual need for them.

Although these measures for limiting the acquisition of materials by enterprises to their actual need significantly reduce resources for non-planned sales, nonetheless one cannot fully exclude the possibility of surplus acquisition of materials or the formation of increased supplies as a result of a reduction of the expenditure of materials because of changes in the production plan or improvement of the technology. But this means that in the future there will still be sales of materials by enterprises, but they will possibly be in lesser volumes. Therefore non-planned sales of materials should be the object of constant attention of supply agencies and bank institutions.

A study of operations for non-planned sales of materials showed that a considerable part of them are sales in the same city; relatively fewer materials are sold to purchasers in other cities. In the accounting documents for non-planned sales that come into bank institutions there are references to agreements that have been concluded or it is pointed out that surplus or unneeded are sold.

Taking into account what has been noted, it seems expedient to coordinate the influence of supply agencies and bank institutions on such operations. In particular, it would make sense for all of the non-planned sales of materials to be regulated by territorial supply agencies and completed with the permission of these agencies.

On their part, bank institutions under these conditions could accept for execution accounting documents for the sales of materials only when supply agencies have given their permission. Thus accounts for the sales of materials should be kept under the policy of preliminary payment, which would prevent the dispatch and shipment of materials in cases where permission has not been given for their sale.

Such a policy will make it possible to utilize efficiently the material resources in the regions of activity of the corresponding territorial supply agencies. Thus granting these agencies the right to regulate operations for non-planned sales of materials will make it possible, if necessary, to find a different purchaser, which will make it possible to use these materials to greater advantage for statewide interests. It is appropriate to note that such a policy will also eliminate the motivation of the enterprises to acquire surplus materials in order to subsequently sell (exchange) them.

Therefore the sales of materials to other economic regions, if this is recognized as an expedient one should try to get by without shipping these materials. In this case the territorial supply administration could acquire the sold materials and notify the other territorial administration of the need to dispatch the corresponding quantity of material to a particular consumer.

The areas that have been discussed for coordinating the activity of bank institutions and supply agencies do not exhaust all the possibilities. But they could bring no small advantage to the national economy by contributing to the improvement of the utilization of material and monetary resources as a result of reduction of supplies, limitation of non-planned sales of materials and so forth. All this could serve to raise the level of organization of the extension of credit and accounting and increase bank control over the rubles.

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## INVESTMENT, PRICES, BUDGET AND FINANCE

### IMPROVEMENT OF CREDIT SYSTEM UNDER DEVELOPED SOCIALISM

Moscow DEN'GI I KREDIT in Russian No 4, Apr 82 pp 72-80

/Article by N. A. Buzina and I. M. Krol, candidates of economic sciences:  
"Problems of Improving the Credit System"7

/Text/ A discussion of problems relating to improving the credit system under the conditions of developed socialism was held at the Scientific Research Finance Institute /NIFI/. The introduction was given by the director of the NIFI, Prof L. Ye. Babashkin. He said that for a number of years the Institute has been conducting research on the most crucial problems of credit under socialism, particularly the effectiveness of credit investments, interest on credit, the loan fund, the credit mechanism and so forth.

He singled out the changeover to an analysis of fundamental problems of the credit system and theoretical research on the main elements of credit relations in their interconnection and interdependency as well as special laws that regulate these relations as an important tendency in the development of the theory of credit relations. Here he emphasized that a comprehensive approach to the development of credit problems, deeper knowledge of the credit system of developed socialism and a higher level of scientific substantiation of ways of further improving credit relations in the national economy will contribute to stepping up their role in intensifying public production and increasing its effectiveness.

A paper entitled "The Credit System and the Laws of its Development" was given by Doctor of Economic Sciences Yu. P. Avdiyants (NIFI). He dealt with three interconnected problems: the content and structure of the socialist credit system, the discovery of economic laws inherent in socialist credit relations, and the development of the system of these laws. The speaker was the first to raise the last problem in the science of credit.

The main points of the paper, which are related to the statement of these crucial problems, have already been published in the economic press. Still, since the discussion developed mainly around the aforementioned issues and those related to them, it seems necessary to give a brief summary of the paper.

Starting with the developments of the content of the concept of the credit system and its most important components which exist in economic literature (the totality of credit relations, the system of credit institutions, the bank system, the loan



fund, the purpose of credit relations, the laws of credit and the patterns of credit relations, the credit mechanism and so forth), Yu. P. Avdiyants noted the need in the modern stage to change over to a higher level of research of this problem: individual elements of this concept should be brought together into a unified whole, into a system. In his opinion, the constituent parts of the socialist credit system are: the loan fund; credit relations arising in the process of the formation and utilization of the loan fund between the bank (the creditor) and the economic agency (the loan recipient); the credit mechanism; the bank (creditor) and the associations, and also other loan recipients that operate on the basis of autonomous financing; and the goal of the credit system.

The credit mechanism, in turn, as part of the credit system is subdivided into a number of elements. It includes, first, forms of realization of credit relations and elements of a particular credit relation which determine its structure (interest on credits, time periods of loans and the object of credit, sources of repayment of borrowed funds, the economic effect from credit investment, the economic interests of the parties in the credit relations and the material stimuli that realize them). In the second place, the credit mechanism, in the speaker's opinion, expresses the general and specific criteria and laws of credit, laws of the formation of individual elements of the credit relations, their interactions during the course of the economic process, and also the organization of planning and control over the results of the extension of credit (the system of bank accounts, kinds of loan accounts, limits on credit, the policy for regulating indebtedness for a special loan account, and so forth). In the third place, there are the laws of interaction of credit with monetary circulation, noncash accounts in the national economy and other divisions of the financial and economic system.

One should consider a central aspect of the paper to be the statement of the problem of the laws of credit and the system of these laws which is of great scientific interest. The system of laws on the methodological plane proposed by Yu. P. Avdiyants includes various hierarchical levels of economic relations and intermediate units. In this content-rich plan, in his opinion, the general economic laws (the basic economic law, the law of planned development of the national economy, the law of economizing on time, and so forth) are realized through finances (as an intermediate unit) in specific laws of credit which reflect specific economic relations in the process of public production.

As for the structure of the laws, their determination and their content, these issues are presented in articles published by Yu. P. Avdiyants, to which we refer the readers.<sup>1</sup> Here let us only emphasize the train of thought of the speaker, who thinks that the general financial laws are concretized in specific laws of budget financing, laws of financing through internal funds and laws of credit. Laws of credit do reflect, on the one hand, the distinctive features of credit relations and, on the other hand, they are a form of manifestation and realization of financial loss.

Here it should be noted that with respect to the content of the concept credit and its essence, Yu. P. Avdiyants shares the point of view that is widespread in economic literature which consists in that credit is a form of surmounting the contradictions between temporary release of funds in the process of reproduction and the need for their constant participation in the circulation of the social

product. According to this position temporarily released funds are used as the fundamental concept, the initial abstraction which reflects the most essential aspect of credit relations, and credit is regarded as a form of advanced financing of resources that are temporarily released in the national economy during the process of public reproduction.

Proceeding from an understanding of credit as a part of finances and as a specific economic relationship, the speaker formulates the main contradiction of credits. It is interpreted as a unique refraction of the overall contradiction which is internally inherent in financial relations and is revealed in the reproduction process in predictable ties between temporarily released funds and resources that are loaded in circulation; between the amounts of funds that are temporarily released from the suppliers and the volume (limit) of credit for consumer enterprises; between credit investments and expansion of the material base of public production; between advanced credit resources and the economic return from their utilization; between the issuance of loans and their return; between the repayment of loans, the payment of interest on credit and the economic results from the use of borrowed resources; between the enlistment of bank funds and the payment of interest for credit; between the volumes and time periods for loans and the objects of credit, bank interest, the level of effectiveness of credit investments and the sources of repaying loans as elements of the specific relationship taken together; between credit and the price of the products, and between the physical and value composition of the loan funds. On the basis of these dependencies one also formulates the specific laws of credit, in which system the speaker singled out the main law which, in his opinion, is the return of credits.

During the course of the discussion of the paper the following problems were revealed, and the speakers concentrated their attention mainly on analyzing these. They include, first, questions of a methodological nature that are related to investigating economic laws in general and the law of credit in particular; second, questions pertaining to the content of the laws of credit as formulated by Yu. P. Avdiyants; third, questions pertaining to the theory of credit, the disclosure of its essence and also the content of the concept loan fund; and, fourth, questions of utilizing laws of credit in economic practice and their reflection in the organization of the functioning of the credit mechanism.

The discussants expressed an opinion about the urgency of the statement of the problem of improving the credit system, which consists in that the object of research is not only the content of subjective laws, but also the formation of the system of these laws. It was noted that the successful solution to other important theoretical and practical problems and also the effectiveness of the further development of the science of credit depend largely on the solution to this problem. And indeed the very statement of this problem demonstrates a certain level of maturity of this science, one of the main tasks of which (like of any other) is to reveal and formulate the fundamental laws that are inherent in its subject and most adequately reflect the objective interconnections and interdependencies among the elements of credit relations in their totality and unity, that is, in their system.

Thus in the speeches of Prof V. I. Rybin (Institute of Economics of the USSR Academy of Sciences) Candidate of Economic Sciences V. S. Sirenko (Moscow Institute of the National Economy imeni G. V. Plekhanov), (Prof V. K. Senchagov (NIFI), Prof S. B. Shteynshleyger (VZFEI), Prof O. I. Lavrushin (MFI) and Prof S. N. Nikolotov (VZFEI) it was noted that a study of the laws of credit and also a systematic approach to their investigation raised the theory of credit to a higher level and essentially mean a new direction for its development which consists in the disclosure of the content of the laws of credit and their system in interaction with the entire system of economic laws are operative under socialism. It was also pointed out that an active development of this problem is important for all of economic science as a whole since without clarifying the special laws of particular spheres of the reproduction process to which the entire area of credit relations pertain one cannot consider the creation of a system of laws of the political economy of socialism complete. This is equally important for further improvement of credit practice, deeper substantiation of the forms and methods of bank activity and effective utilization of the credit mechanism.

In addition to this, the discussions reflected an understanding of the fact that the formation of a scientifically substantiated system of laws is an extremely difficult and theoretically complicated task whose successful solution presupposes purposes and coordinated activity on the part of scientific collectives and also comprehensive consideration of the results of research that have been achieved. In this connection ideas were expressed concerning the need to organize a discussion of these problems with the participation of a larger group of scholars, including philosophers and political economists, and also specialists in financial and credit systems.

This interest in continuing the discussion of the subject was brought about by the urgency of the problems that were raised as well as by the fact that in the judgments and viewpoints that were expressed there were a number of "blank spots" in the development of both methodological and theoretical questions of credit, its laws and the system of these laws.

The main thing that was discussed was the question of the justification for utilizing the category of law when studying credit and the entire sphere of credit relations. This question arose in connection with the doubts expressed by a number of economists regarding the justification for introducing the concept "laws of credit" into scholarly circulation.

Convincing conclusions in favor of the need to use the category of law when investigating credit relations were contained in the speech by S. B. Shteynshleyger. Basing his arguments on the achievements of Marxist-Leninist philosophy and the economic theory of socialism, he emphasized the exceptional significance of revealing the essence and role of the category of law as a means of cognition and transformation of the objective world, which pertains fully to the sphere of credit as well. He also recalled that K. Marx and S. Engels, attaching a great amount of significance to law as a category of cognition, referred to the effect of special economic laws in the sphere of credit although they did not formulate them.<sup>2</sup> He said that the development of this aspect of their study of credit constitutes a task for soviet science since in a socialist society people enter the sphere of credit in economic ties and relations which are controlled in a planned way by special objective laws

of credit whose effect is conditioned by socialist ownership of the means of production, banks and the funds they loan. These laws must be recognized by science for a scientific substantiation of the tendencies in the development of credit practice and conscious control of this. The point about the importance of introducing the category of a law of credit into scholarly circulation was also reinforced by a reference to the fact that in the sphere of monetary circulation economic laws whose existence no one doubts are in effect and are utilized. In this connection he agreed with Yu. P. Avdiyants in that the theoretical activity should be directed toward cognition and substantiation of laws of credit.

During the process of the discussion they also touched on such important methodological issues as the content of the concepts law of credit; the relationships between the concepts of "law" and "economic category," "law" and the "essence of credit"; the hierarchy of laws of credit and their quantity; the mechanism of the interconnection of laws of credit with general economic laws; the specific conditions for the manifestation and functioning of laws of credit, and a number of others.

Various points of view were expressed regarding these issues. In the opinion of some of the economists, law and essence are homogeneous and essentially identical concepts. Other economists, conversely, emphasized not only the general, but also the specific aspects of these concepts, noting that they are of the same order but not identical.

Thus Prof V. S. Gerashchenko (MFI) criticized O. I. Lavrushin's approach to investigating laws of credit, particularly his viewpoint to the effect that a law primarily reflects the essence of credit and is a manifestation of it. This position arises from the laws of repayment of credit and protection of loan funds which O. I. Lavrushin formulated. In V. S. Gerashchenko's opinion, such an understanding of the law leads to a complete identification of the content of the law with the essence of credit. Based on this he thinks that repayment of credit as an attribute of its essence is not a law of credit, just as the protection of loan funds is not a law either.

A position close to that of O. I. Lavrushin concerning essentially equating the concepts of the essence in credit and the law of credit was expressed by A. P. Gorshkov (USSR Gosbank). In his opinion, the internal economic law of the movement of credit, which is based on a definition of its essence, is repayment. He thinks that repayment as a defining law of the movement of credit provides for unity and integrality of all elements of credit relations on the basis of the distinctive features of credit.

Questions of the content of the concepts of a law and its relationship to the essence and the category of credit were considered in the talk by S. B. Shteynshleyger. Proceeding from the notion that laws reflect the objectively necessary stable repeatable cause-and-effect relationships among phenomena and their essences, he pointed out the incorrectness of equating the law of credit with the essence of the category of credit. In his opinion, the law of credit stands above the category of credit as a profounder degree of cognition of essence, as essence of the second order. Through the category of law one interprets the most important and necessary connections between phenomenon and categories in the sphere of credit.



Considering the interconnection and the specific features of law and the category of credit, he noted that credit as a category reflects only one of the aspects of the law, one of its essential characteristics and not the most profound one. He also emphasized that such a relationship between the concepts of law and the category of credit logically and historically reflects the progression of the development of the science of credits. The main stages in this development can be represented as the development of concepts and the recognition of the categories of the credit sphere; the formulation of its laws and the system of these laws; and, finally, their deliberate utilization in practical activity.

Considering the question of the system of laws of credit in its methodological aspect, participants in the discussion focused attention on the need to refine several qualitative and quantitative aspects of this problem during the course of further discussion. Thus M. M. Titarev (Magazine DEN'GI I KREDIT) noted that when formulating laws of credit and the system of these laws it's necessary to clearly define the area of the investigation, that is, to explain what one is talking about: the laws of credit, their features and principles or the patterns in the functioning of the credit system. In his opinion, such an analysis should be based on a disclosure of the interconnection and interdependency of laws of credit with other laws, above all general economic laws. This issue was touched upon by O. I. Lavrushin, V. I. Rybin and A. P. Gorshkov.

Speaking about an approach to investigating the character and content of laws of credit, M. M. Titarev emphasized the need to take into account when formulating them those conditions in which these laws are manifested in actual activity. In particular, he thinks that one should pay special attention to the fact that at the present time credit operates under the conditions of the circulation of symbols of value. In this connection he agreed with Marx's well-known point to the effect that in the circulation of symbols of value the laws of actual monetary circulation operate as if in inverted form. He said that this important methodological point requires an explanation of the mechanism of the influence of the "inverted" action of laws of monetary circulation on all credit interconnections and relationships, which sets for scientists the task of a certain reinterpretation of the mechanism of these interconnections and a surmounting of views which up to this point have been based on ideas about patterns that are inherent in the circulation of actual money which has internal value.<sup>3</sup>

The question of the quantity of laws of credit which form the system of these laws was also discussed. At the present time, as we know, about twenty laws of credit have been introduced into scientific circulation which, on the one hand, shows the initial empirical stage of the investigation of the problem and its inadequate methodological development and, on the other, reflects a predictable process of accumulation of the necessary elements for the development of a scientifically substantiated system of laws. Although the concept of a system is defined in various ways in economic literature, on the whole it means that a system is a certain set of interconnected elements that form a stable unity and totality which has integral properties and patterns.<sup>4</sup>

Various opinions were expressed in the discussion of the question of what the scientifically substantiated set of these elements of the system of laws of credit should be. On the one hand, they noted a need to raise the level of research and to change over to an in-depth substantiation of the content of laws of credit and

also scientific principles for constructing the system of them. Thus ideas were expressed concerning the expediency of examining already formulated laws of credit from the standpoint of the requirements placed on the content of these laws by Marxist-Leninist philosophy and political economics in order to weed out those which cannot come under the concept of a law and also to concretely substantiate the interconnection and interaction of these laws. Then, as was emphasized, the quantitative approach to evaluating laws of credit will disappear of its own accord.

On the other hand, a number of speeches contained assertions to the effect that only one actual law of functioning and development is inherent in credits. This viewpoint was expressed by V. I. Rybin, A. P. Gorshkov and, essentially, by V. S. Gerashchenko.

It was noted that the majority of economists shared the viewpoint about the need to form a system of laws of credit. In addition to this, S. B. Shteynshleyger emphasized the importance of defining an overall law which is in effect and is deliberately utilized in the sphere of credit relations and which controls all partial laws of credit. In his opinion, the main features of this general law consists in the following.

First, the law reflects the objective need for credit as a specific form of direct social monetary ties between the bank and the enterprise which provide by means of the loan for simultaneous formation of payment funds and their transformation into loan funds, and also for their movement.

Second, credit as a form of ties realizes the relationships embodied in loan funds between its participants for more planned and economical utilization of added social consumer value of state loan funds in the interest of society and the labor collectives in order to achieve the goals that arise from its economic essence: strengthening of autonomous financing and, on the basis of this, intensification of public reproduction, circulation of all the value advanced to the enterprise, its preservation and growth, prompt repayment of loan funds with interest to the bank and, in the final analysis, the fulfillment of state plans and the strengthening of monetary circulation.

The idea of the need for formulating an overall law of the credit system which makes it possible from unified positions to regulate in a planned way all processes that arise in this system was supported by V. S. Sirenko as well.

The system of laws the speaker proposed elicited critical remarks from O. I. Lavrushin. In his opinion, some of the laws formulated by the speaker--namely, the law of correspondence between material and value elements of the social product, advancing resources, financing expenditures that are entailed, the correspondence of an equivalent form of advance payments (finances) and a relative form of advance payments (price) and others--do not reflect the essential elements of credit in a socialist society and therefore cannot be qualified as laws of credit. He thinks that these properties are inherent not only in credit, but also in other economic categories. Thus the specific essence of credit and the laws of its movement are dissolved in the overall system of value indicators. Moreover, he noted that a number of the laws mentioned by the speaker do not characterize objective aspects of credit relations, but pertain to superimposed elements and its utilization.

An active discussion developed around the thesis advanced in the paper concerning the secondary nature of the category of credits with respect to the category of finances and the need to investigate laws of credit as forms of manifestation of financial laws, which, in turn, are elements of commodity and monetary relations. As we know, the question of the relationship between credit and finances has long been discussed in economic literature. But since the tenet which is criticized by many economists concerning the secondary nature and subordination of credit to finances has moved into the sphere of its laws, participants in the discussion advanced new arguments against this position. The speeches of a number of economists emphasized the incorrectness of considering laws of credit as forms of manifestation of financial laws. All these economists proceeded from the idea that credit is an independent economic category and is not a constituent part of the broad concept of finances.

Having noted the disputability of the hierarchy of categories proposed by the speaker, M. M. Titarev made a number of remarks regarding the nonhierarchical structure of the system of general financial laws and laws of credit that were proposed by Yu. P. Avdiyants. In his opinion, financial relations (defined by the majority of economists as relations of distribution and redistribution) cannot be primary with respect to credit if only because the redistribution processes are carried out, as a rule, after the sale of the products and the sale itself is directly mediated by credits. He noted further that the thesis concerning the secondary nature of credit relations as compared to financial ones and also the coordinative nature of credits with commodity and monetary relations through finances as a mediating unit is incorrect for another reason. This consists in that monetary relations comprise one of the indispensable aspects of commodity relations in a socialist economy and money is advanced for commodity and monetary circulation only on the basis of credit.<sup>5</sup> In direct connection with this he especially emphasized that what is common to all kinds of monetary relations (strictly monetary, credit, budget and other financial relations) are not the "common financial laws" proposed by the speaker, whose existence has not yet been proved, but the laws of monetary circulation that were discovered and clearly formulated by K. Marx. Therefore, when developing a system of credit laws it is more logical to take into account the laws of monetary circulation that are common to all kinds of monetary relations, and not "general financial laws."

As a result of the discussion of this issue a conviction, which is correct in our opinion, was expressed to the effect that finance and credit are not intercoordinated; they are independent economic categories of the same order, equivalent elements of the system of commodity and monetary relations. Having positively evaluated the approach of the speaker to disclosing the dialectical interconnection of laws--general, financial and credit--S. B. Shteynshleyger also pointed out that finances and credit are undoubtedly interrelated but not along the "vertical" as content and form, but along the "horizontal" as two adjacent categories in terms of their content and form. He emphasized that although these categories are joined into a unified whole, they are realized by various means; relations between general economic laws and these categories are such that commodity and monetary relations are a form of economic relations and credit and finances are forms of monetary relations.



In addition to this, V. S. Sirenko and V. K. Senchagov supported the speaker's viewpoint about the secondary nature of credit as compared to finances and the corresponding coordinative nature of the system of their laws, although they recognized essential differences in these categories. Thus, in the opinion of V. S. Sirenko, there are justifications and extensive possibilities of developing an overall theory of finances and credit.

On the whole, as was noted in the speeches, the discussion that was held revealed the need for a further in-depth study of the system of the laws of credit and more fundamental development by scientific collectives and scholars of the total concept of the credit system under mature socialism. In addition to this, the statement and discussion of the problem of the system of laws of credit, like the laws themselves which were formulated by Yu. P. Avdiyants despite the importance and crucial nature of this problem for theory and practice, revealed certain gaps in the development of the category of credit--a pivotal element and the foundation of the system of these laws. Therefore many participants in the discussion sided with O. I. Lavrushin, who noted that up to this point there continues to be an unsolved problem which has to do with the content of credit and its role.

In the speeches a great deal of attention was devoted to the need to overcome the so-called redistributory concept of credit which interprets it as a form of redistribution of temporarily released monetary funds of the economy under the conditions of their return through accumulation by the bank and their granting on loan.

Since the system of laws of credit formulated by Yu. P. Avdiyants, as was noted, is based on this concept, participants in the discussions expressed a number of considerations, which are weighty in our view, substantiating the opposite position.

The reasons for the fact that redistributory concepts are widespread were discussed in the speeches. As S. B. Shteynshleyger noted, this is a result of the fact that almost all scientific thought in the area of credit has long been concentrated on the study of it as a phenomenon and as a category of circulation. Such a unilateral approach has led to a situation where credit is basically regarded from the standpoint of its form and not its content, not as an essential economic production relation. This stage in the theoretical analysis has been forgotten by researchers. It was also noted that K. Marx discovered credits to be a category that reflects relations in both phases of reproduction (production and circulation-exchange). To interpret credit only as a category of circulation which reflects the relations of return redistribution of temporarily released monetary funds has led, in the opinion of S. B. Shteynshleyger, to a situation where the theory of credit has been dominated by the empirical level of its study and a number of viewpoints have arisen regarding the essence and role of credit and banks while its actual essence continues to be inadequately disclosed. Moreover, there have been serious mistakes in credit practice, particularly in the organization of payment circulation, the process of extending credit for circulation, calculating operations and the introduction of indicators of the effectiveness of the utilization of credit.

These considerations were developed by Candidate of Economic Sciences I. M. Krol (DEN'GI I KREDIT). Considering the reasons for the inadequate development of the key theoretical problems of credit on the basis of an analysis of tendencies in the development of views of economists concerning individual aspects of the content of



credit, and also a classification of the numerous standpoints, she came to the conclusion that there are two large areas in the theory of credit, one of which amounts to interpreting it as a category of circulation and the other regards credit as a category of reproduction, that is, both production and circulation. She also noted that under modern conditions when it is necessary to have comprehensive utilization of factors that intensify production, the center of gravity in the development of the problem of bank credit is predictably transferred from describing external, organizational and technical aspects of the processes of extending credit which take place in the sphere of circulation to a theoretical explanation of the specific content, the position, the role and the sphere of utilization of credit relations in the reproduction process from the standpoint of objective laws of reproduction and its effectiveness. Of essential importance for a profound understanding of these complex issues, she thinks, are points made in literature concerning the commercial nature of funds loaned by the bank as an object of bank credit and their necessary connection with the final results of production, and, above all, with planned profit (profitability).

New elements of knowledge about credit which have been accumulated by science during the past decade were reflected and further developed in the speeches of the participants in the present discussion.

Thus M. M. Titarev drew attention to the essential changes in the mechanism of credit redistribution. He showed that under the condition of the circulation of symbols of value on the basis of and by means of credit one redistributes not money as symbols of value, but value. Thus advanced circulation of monetary symbols under these conditions does not involve their preliminary accumulation.

He emphasized that these changes in the movement of funds have expanded the anticipational possibilities of credit, which requires special attention to problems of practical utilization of these possibilities, keeping in mind providing for economically substantiated monetary and value proportions in reproduction.

The viewpoint about the anticipational possibilities were essentially developed by V. S. Sirenko as well. Approaching the analysis of the essence of credit on the basis of the theory of systems, he expressed the opinion that credit is a form of preliminary substitution for expected incomes in the economic system in order to effectively compensate for their outlays. Compensation for expenditures under conditions where there are no incomes and they must be created is thus the basis for the appearance of credit relations. He emphasized, moreover, that this involves only compensation for effective expenditures--a guarantee of the fact that the incomes will come in and the money granted on loan will be returned with profits. In his opinion, one should proceed from these positions in substantiating all credit relations within the framework of the credit system and evaluate them on the basis of whether or not they satisfy the principle of substituting credit resources for expected incomes in order to effectively compensate for expenditures so as to efficiently fulfill the national economic plan. He thinks that this principle reflects the requirements of the laws: the repayment of credit; the effectiveness of credit; the repayment of loans and bank interests through the economic results from the utilization of the borrowed money. These are the laws he formulated in his paper.

I. P. Kitaygorodskiy (USSR Ministry of Finance) also noted that the redistributory interpretation of credit which served as the basis for Yu. P. Avdiyants's formulation of the law of the economic limit of credit for enterprises (the extreme boundary for the extension of credit to enterprises and associations as consumers depends on the amounts of temporarily released resources of the enterprises--their suppliers and the amount of deliveries) is not confirmed by practice.

He also advanced the conclusion that the financial plans of the enterprises do not envision the creation of monetary reserve, and part of the circulating capital in the sphere of turnover is covered by bank credit. All this leads to a situation where residual funds of economic agencies in their bookkeeping accounts are minimal and cannot serve as a basis for determining the limits of bank credits.

O. I. Lavrushin also spoke against the expansive understanding of credit as accumulations of temporarily released monetary funds and their distribution on the basis of their repayment. He advanced a number of methodological requirements for investigating the essence of credit. In his opinion, the determination of the essence of credit should reflect the specific nature of the economic category; refer not to one of the subjects of the relations, but to both of them; apply to all forms of credit; and reflect its socio-economic aspect. Based on this, he emphasized that the specific property of credit and its law is the movement of value on the basis of reimbursability.

The speech of S. B. Shteynshleyger also presented conclusions against the interpretation of the loan fund as an economic form of movement of temporary released monetary funds in the economy, which are mobilized and replaced by bank loans. He noted that with such an understanding of the loan fund the bank acts in one and the same economic relation and simultaneously in one of the same loan transaction as the borrower and the lender. From this understanding it should logically follow that the loan fund is the property not of the state, but of the bank depositor, which does not correspond to reality. In his opinion, the concept "loan fund" can be used only under one condition: if it is understood as the category of "loan funds" (credit investments), that is, bank money that is in circulation of the enterprises and belongs to the state and not to the bank depositors.

The urgency of further development of the theory of credit, particularly its key problems--the need, essence, functions and role--was emphasized by S. N. Nikolotov. Having noted the importance of comprehensive consideration of problems of commodity and monetary, monetary and credit, credit and financial and other forms of economic ties and relations and improvement of the coordination of the activity of scientific research forces, he also expressed disagreement with the interpretation of the content of credit that is accepted in literature.

Additionally, in the speeches as whole it was emphasized that with the certain disputability of the laws of credit and the system of these laws that were proposed by Yu. P. Avdiyants, the statement of the problem itself, if one considers the attempt he made to solve it from positions of the historical process of the emergence of the system of laws of science about credit, opens up an important new stage in its development. The next stage, along with theoretical analysis of credit as an economic category, should be an in-depth development of laws of the credit sphere that have already gone into scientific circulation, and also

methodological and theoretical fundamentals of the construction of the system of these laws. This is an indispensable condition for the creation of a mature scientific concept of credit in a developed socialist society.

The speeches also touched upon the theoretical and practical problems of the credit mechanism.

V. I. Rybin suggested the following system of concepts which reflect the objective bases of credit relations: laws, categories (forms of manifestation of the law), functions (objective manifestation of the content of the category) and the mechanism for their utilization (the credit mechanism). The last, in his opinion, reflects the upper part of the production relations where the objective foundations are combined with the subjective activity of people.

In the opinion of S. B. Shteynshleyger, the credit mechanism is a structure of socialist credit ties and relations which consists as a systemic formation of two interconnected groups (blocks) of elements, the first of which pertains to the essential aspects of the laws of credits and the second--to the means of utilizing them. He emphasized that the credit mechanism provides for planned movement of loan funds and conditions the strengthening of autonomous financing, monetary circulation and, as a final result, increased efficiency of public production, improved quality of labor and the fulfillment of state plans.

Prof M. A. Pessel (MESI) considers the credit mechanism to be a constituent part of the unified socialist economic mechanism, as a system of arranged principles and methods of realizing the entire totality of functions performed by credit and the bank, and also methods of planning, organization and control of monetary circulation. As the main interconnected elements (blocks) of this mechanism he singles out: credit planning, credit levers (the system of extending credit, loan periods, interest rates and so forth), the organizational structure and the legal conditions of the credit system.

Characterizing the credit mechanism as the totality of methods by means of which one utilizes the effect of the economic laws of credit, he also distinguishes the content of this concept and that of the concept "mechanism of credit extension." He thinks that the latter includes various forms, methods and kinds of granting, utilizing and repaying loans (the policy for the participation of the enterprises' own funds in credit, objects for credit, regulation of the amount of the loan, and so forth).

A distinguishing element in the system of the mechanism of credit granting, in his opinion, is the form of credit, whose development and change is directly reflected in the specific features of the organization of the methods of granting credit for the economy. He understands this method of advancing credits to be a means of organizing credit relations which generalizes the most important features of the credit mechanism: the form of the loan accounts, the policy for granting credit and its repayment, and the organization of bank influence on the process of granting credit.

Adding detail to the system of elements that comprise the content of the credit mechanism, he suggested changing the term "method of granting credit," for example, for circulation, to a broader and more general term, "form of granting credit," which, from his point of view, more precisely characterizes the policy for granting and repaying loans.

This point was criticized by S. B. Shteynshleyger on the basis that, taking into account the systemic nature of the content of credit, the credit system and the credit mechanism, not a single element of this system can be replaced by another one. He substantiated the impossibility of such a replacement by the fact that the form of credit is an essential concept while the method of granting credit is the realization of the essence of credit in the concrete practical activity of people.

The speeches also covered the question raised in the paper concerning the connection between the laws of credit and the principles of granting credit. S. B. Shteynshleyger, having supported the speaker's point of view concerning the existence of an organic connection between laws and principles, noted that principles cannot act as the essential aspect of credit. In his opinion, a principle is a method, a form of realizing the essence of credit; it is an element of the system of utilizing the laws of credit that is established by people.

V. S. Gerashchenko thinks that an analogous coordination exists between the category of credit and principles of extending credit. Therefore, in his opinion, it is possible to speak only of principles of extending credit, that is, the granting of funds on loan, and not principles of credit, since the economic category has no principles. He noted that this applies equally to prices, finances and so forth.

A. P. Gorshkov emphasized in his speech the relative independence and specific nature of the system of principles for extending credit as compared to the laws of credit. This independence, he supposes, is manifested, for example, in the fact that an economic law acts in the form of a general tendency, while a system of principles for extending credit regulates each credit's transaction, thus providing for the utilization of the law by the subjects of the credit relations.

When considering the forms of organization of credit relations in the modern stage ideas were expressed regarding the method of extending credit for circulation. V. S. Gerashchenko, S. B. Shteynshleyger and M. A. Pessel pointed out that, because of the mechanism for special loan accounts, money is saved when they function as means of payment.

Suggestions were also made concerning the introduction of a number of corrections and additions to the existing policy of extending credit in order to increase the role of credits. In the opinion of V. S. Gerashchenko, it is necessary to create motivation on the part of enterprises and organizations who receive credit for circulation of material values and expenditures on wages to economize on the utilization of borrowed funds. At the present time, he said, they do not have this motivation because the enterprises pay for funds deposited in the Gosbank regardless of the amount of their actual indebtedness with the special loan account. He suggested charging interest based on the actual sum of borrowed circulating capital.



Candidate of Economic Sciences N. E. Sokolinskaya (TsNIITEI of tractor and agricultural machine building) thinks it expedient to revise the normatives regularly and also to reduce the number of blank articles in them for a better determination of the proportion of borrowed funds when calculating the control figure. In her opinion, it is necessary to develop a system of measures for increasing the responsibility of the financial services of the associations and enterprises for nonproductive expenditures and to replace certain kinds of credit with others.

Participants in the discussion considered questions of developing payment credits. Doctor of Economic Sciences V. S. Zakharov (USSR Ministry of Finance) and V. S. Gerashchenko think that payment credit is largely conditioned by negative phenomena, particularly the growth of above-planned supplies, which leads to a retardation of the turnover of circulating capital. In this connection, V. S. Zakharov noted the need to step up control over the ruble when extending credit for material supplies and to maximally coordinate the mechanisms for issuing payment credit with the movement of material values. V. S. Gerashchenko emphasized that certain negative features of payment credit stand in contradiction to the main principles of granting credit: availability and promptness.

The banks are the immediate organizers of credit relations and the ones that carry out the state credit policy. Measures of recent years have led to a considerable concentration of bank business. This tendency seems to be fairly well substantiated and the result of its development, in the opinion of a number of participants in the discussion (V. S. Zakharov, S. B. Shteynshleyger, N. D. Barkovskiy and V. I. Rybin) should be the creation of a unified bank with specialization within it.

While not objecting in principle to this suggestion, V. S. Gerashchenko thinks it possible to create a unified bank in the more distant future. At the present time he recommends a clearer delineation of bank functions: the Stroybank should handle new capital construction, the USSR Gosbank, since it is involved with all existing enterprises, should handle all capital expenditures on reconstruction, technical re-equipment and modernization of existing enterprises.

Under modern conditions primary attention is attached to the achievement of a more stable balance of material, labor and financial resources and further development and improvement of the balance and normative method of planning.

These issues were discussed in the speeches by Candidates of Economic Sciences N. D. Barkovskiy (USSR Gosbank), V. I. Rybin, I. P. Kitaygorodskiy and B. N. Agraponov. In the opinion of N. D. Barkovskiy one of the important problems on a general economic scale is improvement of planning--production, financial, the planning of monetary circulation, and credits. He said that here bank activities should develop in the direction of contributing through bank methods to the consolidation of the balance of plans, better intercoordination of indicators of the plan and more active influence of plans of the credit system on solving problems in the economic policy.

Plans of the finance and credit system, both in the process of drawing them up and in the course of implementing them, should more actively influence the achievement of the directive indicators for economic growth. Therefore, it becomes more and

more important to have a balanced method of planning credits and resources that is directed toward purposes of extending credit in the country as a whole and in the various union republics.

This opinion was supported by V. I. Rybin, who noted in his speech that credit through planning should exert a more active influence on processes of balancing the plans of the national economy and implementing them and making sure that material and financial resources correspond to one another.

Prof R. V. Korneyeva (MINKh imeni G. V. Plekhanov) devoted his discussion to problems of improving the credit system. An important direction for further improvement of the credit system, in her opinion, is increasing the role of credit in stimulating the production of high-quality products. Here she emphasized the urgency of a comprehensive solution to these problems, taking into account the interests of the manufacturer, consumer and national economy as a whole, and also a differentiated approach when organizing credit in various branches.

During the process of the discussion they also considered questions of improving accounts. Thus Candidate of Economic Sciences A. M. Kosoy (USSR Gosbank) touched on two issues: the organizations of accounts and the sequence for bringing resources into economic circulation. In his opinion, accounts in the national economy for commodity and material values should be kept not only within the limits of the monetary funds and the right to credit, but also within the limits of the value fund which should be regularly planned for a given purpose. As for the sequence of enlisting resources (internal circulating capital, bank credit and so forth) into economic circulation, this can vary in various spheres of the economy. In the area of forming the sources of circulating capital, A. M. Kosoy thinks it possible to utilize credit to provide minimal irreducible supplies of commodities in trade and supplies of final products in branches of light industry and the food industry. The source of credit for these supplies could be, he noted, permanent cash resources in the hands of the population. He suggested that the internal resources released in the aforementioned branches be redistributed to heavy industry for increasing the normative through creating budget deposits in the bank for extending credit to heavy industry for the circulation of material values without replacing part of the internal circulating capital with credits.

Questions of improving the financial balance were discussed in the responses by Candidate of Economic Sciences B. N. Agraponov (MINKh imeni G. V. Plekhanov) and Candidate of Economic Sciences G. Ya. Shakhova (NIFI). B. N. Agraponov criticized the existing schema for balancing state financial resources and presented ideas about improving it, particularly a proposal to combine credit and financial resources into one balance account. Here he noted that quantitative attachment of credit resources and investments to particular incomes and expenditures of the state is an important condition for coordinating monetary and material-substantial aspects of national economic planning and distribution.

In order to avoid repeated accounting in the financial balance, G. Ya. Shakhova suggested that resources from long-term credit be taken into account only in the part that is formed as a result of monetary accumulations of past years. As for resources from short-term credit, in her opinion, they should not be taken into account in the monetary funds of the state that are intended for financing expanded reproduction and be reflected in the resource part of the summary financial balance as was suggested in the paper.

Summing up the results of the discussion, V. K. Senchagov emphasized that the new arguments and ideas expressed in the responses will contribute to further development of the theory of credit and finances and also to the development of directions for improving the financial and credit mechanism in order to utilize it more effectively.

#### FOOTNOTES

1. VOPROSY EKONOMIKI, 1981, No 11; DEN'GI I KREDIT, 1982, No 2.
2. See: Marx, K., Engels, F., "Works," Vol 25, Part II, p 376; Vol 37, pp 415-416.
3. For more detail, see: DEN'GI I KREDIT, 1982, No 2.
4. See, for example, Kuz'min, V. P., "Printsipy sistemnosti v teorii i metodologii K. Marksa" [Principles of System in the Theory and Methodology of K. Marx], Moscow, Politizdat, 1980.
5. For more detail, see: DEN'GI I KREDIT, 1982, No 2.

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## INDUSTRIAL DEVELOPMENT AND PERFORMANCE

### PHYSICAL INDICATORS OF INDUSTRIAL OUTPUT

Moscow PLANOVYE KHOZYAYSTVO in Russian No 7, Jul 82 pp 76-87

[Article: "The Problems of Improving the System of Physical Measurers of Industrial Output"]

[Text] It is envisaged by the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 on the improvement of the economic mechanism to improve the system of physical indicators so that they would promote the increase of the orientation of enterprises and organizations toward the end results of production, first of all the more complete satisfaction of the needs of the population and the national economy for products of the appropriate quality. This means that the demands on the consumer properties of the items of not only machine building, but also other sectors are increasing. Under such conditions the enterprises of industry, construction and transportation should be aimed to a greater extent by means of the plan at the achievement of high end results with fewer expenditures. The workers of USSR Gosplan told how this demand is being met at an applied science conference in April 1982.

Deputy Chairman of USSR Gosplan A. V. Bachurin noted in the opening address that the work performed on the improvement of the physical measurers of output does not meet the requirements of today. A number of ministries and councils of ministers of the union republics are not devoting the proper attention to this question. The indicators being used often are not oriented toward the improvement of the consumer properties and quality of the output being produced. In a number of instances unnecessary indicators are being used.

In the practice of the planning of the production of output in physical terms the proper turn to indicators, which characterize the consumer properties and qualitative parameters of items, has not yet occurred. Quantitative indicators and criteria predominate. Of course, they will be retained and will be used in the balances and in the system of planning calculations. But it must be borne in mind that quantitative physical measurers (rubles, tons, ton-kilometers) when evaluating the results of the work of enterprises and paying bonuses often come into conflict with the task of increasing the interest of labor collectives in improving the end results of production. At the same time it is necessary to overcome the discrepancy between the fulfillment of the plan with respect to the physical indicators and the obligations on deliveries of products. There are also other questions, to the solution of which this conference should contribute.



In the report "The Basic Directions of the Improvement of the System of the Physical Indicators of Output and the Practice of Their Use" V. D. Ukrainskiy, the chief of a department of USSR Gosplan, stressed that the system of indicators of the plan should not only specify the goals of production, but also stimulate their achievement. The assurance of such unity in all the links of management is the most difficult problem of the improvement of the economic mechanism as a whole and the system of the physical and value indicators of output in particular.

The speaker names the following directions of the improvement of the system of physical indicators.

First. The list of items, which is approved in the center, is increasing. But no matter how such a list is enlarged, it will always be a consolidated one. This is extremely important for understanding the problem of improving physical indicators. These indicators are needed as the bearers of the material composition of production. Therefore they should express the consumer properties of a product. But in the case of the consolidation of the list the indicated properties inevitably become extremely vague.

It is necessary to include ministries and enterprises more actively in the process of the planning of production and, consequently, the balancing of the state plan. The bulk of the work, which determines the influence of the state on the production program of the supplier, should be transferred to the level of the enterprise, which acts both as a supplier and a consumer. Such a function of the enterprise is being poorly taken into account. We, the speaker continued, are proceeding first of all on the basis that each enterprise is a supplier, and plan primarily only this aspect of its activity. But the demands of the consumer of products on the supplier always contain more conditions, which reflect the interests of the state, than does the planning of production in a consolidated products list.

Those who produce products should study the needs for the products, on the basis of the interests of the national economy. Therefore the range of the list of items, which is approved in the center, is predetermined by the responsibility of the ministries and enterprises for the meeting of the need of the national economy for the products being produced.

Second. Steps on the creation of a uniform system of physical indicators, which complement each other at the national economic and sectorial levels and directly at the enterprises, are needed. At the first two the use of a group products list is inevitable. At the level of USSR Gosplan this is, obviously, a consolidated products list, which conforms to the highest groupings of the all-union classifier, for example, milling equipment as a whole. At the level of the sector the products list is subdivided by types (20-30 descriptions). For example, milling equipment is subdivided into rolling mills, draw benches and so on. Here approximately 800 descriptions of items will be included in the plans of enterprises.

Such a method makes it possible to have at each level standards on material and technical supply, the labor indicators, expenditures and so on. Moreover, it makes it possible to solve simultaneously the questions of production and distribution. At the national economic level as a result of a high degree of consolidation the products list corresponds more to the balance methods of the distribution of products than their production. This is more of a limit indicator. The products list of ministries and enterprises conforms more to the requirements of production.

Owing to this USSR Gosplan should not engage in the planning of the intrasectorial (ministerial) products list. This type of activity should be governed directly by the ministry on the basis of the assignments on the final product for the sector. However, at present the ministries are "involving" USSR Gosplan in this process, in which the guarantee of material support is seen. The speaker notes that the present procedure of material and technical supply is becoming obsolete. The production plan is a more reliable guarantee, and for this reason its products list is continuously being enlarged. The result is that USSR Gosplan is forced to engage in the simplest type of planning--the list of the production and distribution of products, while neglecting those indicators with which it is objectively necessary to deal under present conditions: the indicators and methods of managing the economy (and not simply the mechanical increase of what has already been achieved).

Physical indicators are necessary for the determination of the proportions of the national economic plan, the introduction of new equipment, the elimination of the shortage of products and the development of exports. Hence stems the requirement of the updating of the products list. At present the departments of USSR Gosplan often perform unnecessary functions, while the ministries have held aloof of many things. Thus, the Motor Vehicle, Tractor and Agricultural Machine Building Department plans the production of motor vehicles not only by types and makes, but also by modified versions, for example, of northern design. However, the real need for the latter is ascertained only in the process of distribution. Such a procedure must be revised.

Third. By means of the appropriate measurers it is possible to characterize products according to the volume of their production. It is also possible to characterize these production in terms of use value--horsepower, carrying capacity, heating capacity, the content of useful ingredients in units of weight and so forth. At the level of the national economic plan both groups of measurers are needed.

The structure of the units of measurement changes. Whereas several years ago the measurers of quantity, weight and volume predominated, which conformed to the use of such value indicators as the gross and commodity production, now the composition of the measurers is oriented toward the maximum reflection of the consumer properties. Therefore coordinated actions are needed when determining the products list and choosing the appropriate measurers.

It is necessary to enlarge the list of production at the lower levels and to specify it in units of measurement. Measurers, which have the capacity for extensive generalization, should correspond to the consolidated products list. These are, as a rule, quantitative, weight or value indicators. And whereas the first two types say little about the use value of many types of products for specific consumers, the value indicators lack this possibility. However, in contrast to the notorious "ton" the value measurers of output are not being criticized in the press.

The change of the units of measurement of output is not a mechanical process. The intelligent coordination of the structure of the group products list with those indicators, which are capable of expressing the properties of products, which make it possible to balance as much as possible the process of production and consumption as a whole, should be the basis for it. In the production of consumer goods the value units of measurement (retail prices) at the level of the national economic plan ensure for the present a closer connection with the volume of the

commodity turnover than do physical measurers. However, as the demand is met, the situation may change.

If we take the path of consolidating the products list at the upper levels of management, the use of the corresponding generalizing measurers of output will reflect less and less the consumer properties of products. The solution of the problem consists in the enlistment in the work on the production program of all the levels of management and in the breaking down of the group products list in the ministries and at enterprises. At the level of USSR Gosplan so-called dual measurers of the output, which conform to a greater extent to the requirements of both the process of production and consumption, should be used more extensively.

Fourth. The practical work of the departments of USSR Gosplan on improving the system of the physical indicators of output for the purpose of increasing the quality of the plans should be backed by the efforts of the enterprises. For this the evaluation of their activity should also be subordinate to the interests of the fulfillment of the balanced plan in accordance with the physical composition. The method of evaluating the activity of enterprises according to the sold output with allowance made for the fulfillment of contractual obligations can serve this. It has already been used for 2 years and has become a part of reporting.

When preparing the draft of the plan for 1983 it is necessary to use more extensively the method of a uniform products list for the compiling of the different sections of the plan--the production volume, labor, the production cost, as well as for determining the need for raw materials, materials and components. It is expedient right now to begin the formulation of the products list which is planned at the corresponding levels.

In the report "The Improvement of Physical Measurers in Machine Building for the Purposes of the Enhancement of Their Role in the Increase of Production Efficiency and the Decrease of the Materials-Output Ratio" B. M. Martynov, chief of a department of USSR Gosplan, noted that assignments which envisage: the decrease of the metal content of the most important types of machines and equipment; the production of precision blanks and parts with the use of low-waste technological processes, including the obtaining of blanks by die forging, heading, extrusion and milling; the comprehensive development of powder metallurgy, including advanced methods of the application of metallic powders to parts of machines, items and welded metalwork; the development of plasma and pulse technology, the introduction of equipment for the plasma machining of metals; the production of part milling machines, sets of forge and press machines and other types of advanced equipment for obtaining precision machine building blanks and parts, have been included for the first time in the State Plan of USSR Economic and Social Development for 1981-1985 and for 1982.

In 1981 new indicators of the overall evaluation of the use of material resources were elaborated and were included for the first time in the plan. This will contribute not only to the increase of the efficiency of the use of all types of metal, but also to the purposeful improvement of the structure of the consumption of construction materials and to the decrease of the weight of machines and equipment. For the purpose of tightening up the monitoring of the use of material resources USSR Gosplan starting in 1982 will begin to approve within the national economic plan individual rates of consumption for 500 types of products of machine

building of mass, series and large-series production. Specific indicators of the consumption of rolled ferrous metal products per million rubles of the output of commodity production of machine building are being used more and more when preparing the drafts of the plan.

The group of new indicators, which have been included in the five-year plan, to a considerable extent reflect the policy of improving the physical indicators. It is a question of replacing the measurers, which do not characterize or inadequately characterize the consumer properties of items, with other physical measurers which reflect more completely these properties and technical and economic parameters of the items; the use of physical measures which in combination reflect the quantity of products, their most important consumer properties and structure; the planning of the production of equipment in sets (complexes); the improvement of the used groupings of machines and equipment, the breaking down of extremely aggregated groups which are different in composition, and in individual instances the change of the grouping attributes, if they do not ensure the uniformity of the groups being formed with respect to the consumer properties, the materials-output and labor-output ratios; the broadening and improvement of the indicators of the plan of the production of machine building products.

It is understandable that the replacement of one physical measurer by another is not an end in itself. The introduction of a new measurer should direct the attention of the producer to the production of output with the desired technical and economic parameters and the increase of its physical volume. The new measurer should conform to the directions of the technical progress of the sector and should promote the decrease of the materials-output and labor-output ratio of products with the improvement of their technical and economic parameters.

The work performed in 1980-1981 by USSR Gosplan and the ministries made it possible to make in the system of indicators of the plan of the production of machine building products changes of the units of measurement for 70 types of machines and equipment. Moreover, the products list was increased by 88 descriptions and 162 complexes.

However, the excessive enlargement of the list of products included in the state plan not only complicates planning and increases the amount of work of central organs, but can also lead to the relaxation of the monitoring of the fulfillment of the plan with respect to each line item and decrease the responsibility of ministries for the supply of the national economy with machines and equipment. Therefore, when including new line items in the products list envisaged by the draft of the plan, obsolete products should be excluded.

The enlargement of the products list of integrated production and deliveries is envisaged, which ensures the possibility of the complete mechanization and automation of technological processes. For the present the level of supply in complete sets by the ministries does not exceed 7 percent of the total commodity production of output. This stems from a number of difficulties of a procedural and organizational nature, especially in the area of the planning of complexes and systems of machines.

Considerable work in the improvement of the units of measurement has been done in the electrical equipment industry. Previously the production of lead batteries



was planned in thousands of tons of lead, which oriented producers toward the increase of their weight, and not toward the improvement of the technical and economic parameters. The use of two measurers--millions of ampere-hours and thousands of tons of lead--will ensure the more complete reflection of the consumer properties of the products and the efficient use of materials. Other changes were also made. For mobile electric power substations, crane electric motors and electric locomotives, in addition to the physical measurer "units," which had been in effect and does not describe the parametric properties of the products, the measurer "thousands of kilowatts," which to a certain extent reflects these properties, was introduced.

In machine building for light and the food industry for the purpose of characterizing the productivity the output of spinning machines is now planned in units and thousands of spinning spindles; of pneumatic spinning machines--in units and thousands of spinning positions.

In the machine tool and tool building industry the products list of the state plan has been enlarged. To the line item "vertical boring and turning machines" there has been added: "including machine tools for the machining of items with a diameter of 2,500 mm and larger." Machine tools with a drilling diameter of 50 mm and more have been separated from the group of drill presses. Some line items have been excluded from the state plan in connection with the fact that the need for the corresponding items is being completely met.

An important question concerns the measurement of output in tons. In conformity with the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, this indicator should be an estimated indicator. This indicator has been excluded from the products list of the Ministry of Power Machine Building, the Ministry of Chemical and Petroleum Machine Building, the Ministry of the Machine Tool and Tool Building Industry, the Ministry of Instrument Making, Automation Equipment and Control Systems, the Ministry of Tractor and Agricultural Machine Building and the Ministry of Machine Building for Light and Food Industry and Household Appliances, which is approved by the USSR Council of Ministers.

At the same time some questions of measurement in tons in billet making and the production of milling equipment remain unresolved. The results of the search for new units of measurement (conventional tons, the adjusted labor-output ratio) so far have not yielded the desired effect. In the opinion of specialists, it is necessary to plan the production of milling equipment in millions of rubles and tons. It seems that the changeover from rubles and tons to a specific products list should be made at the level of the Ministry of Heavy and Transport Machine Building.

The conference participants also discussed questions of the improvement of physical indicators.

Thus. N. A. Bogatov, deputy chief of a department of USSR Gosplan, raised the question of the measurement of finished types of metal products. Iron ore, pig iron and steel are raw materials and semimanufactures. It is possible to plan the volumes of their production only in tons. Apparently, this circumstance predetermined to some extent the use as a physical tonnage measurer of the volumes of finished types of metal products, finished rolled products and steel pipe.

The backlog of orders of any metallurgical enterprise contains a wide range of sizes of items, which differ substantially from each other in metal content. In turn, the productivity of rolling and pipe mills is directly dependent on the metal content of the product. The greater it is, the greater the productivity of the mills is (if it is measured in tons). In difficult situations metallurgists give preference to the production of output of a greater metal content, filling the orders for its delivery ahead of time and postponing the production of output of a decreased metal content. If favorable circumstances do not set in for a long time, the surplus of output of a greater metal content increases, and considerable harm is done by this to the national economy.

A general direction of the development of metallurgical production is the decrease of the metal content of products. Good results of the increase of its efficiency can be and, undoubtedly, will be achieved in this direction.

The development of metallurgical production, including the acceleration of scientific and technical progress in this sector, should be such, that the output of products of a lower metal content would steadily increase. The latter (as follows from the economic analysis of production situations) will inevitably lead to the decrease of the total volumes of the output of metal products on operating mills (if their quantity is measured in tons). Thus, the distorted impression will be created that the development of metallurgical production is following a descending line. Moreover, with the increase of the output of products of a lower metal content a distorted idea of the amounts of resources of rolled metal products will emerge. The tonnage measurer cannot reflect either the quality or the use value of finished types of metallurgical products. Precisely for this reason the semblance of a decrease of their resources also appears, although the real picture is different.

The evaluation of the output by linear measurers, which reflect the actual measure of consumption, shows the increase, and not the decrease of the resources of metal products. In order not to distort the real picture of metallurgical production, to promote the increase of its efficiency and thereby to achieve the better meeting of the need of the national economy for metals with the systematic decrease of the production expenditures, it is necessary to reject the tonnage measurer and to change over to the use of meters or square meters as the physical indicators of the output of metal products.

At present an experiment is being conducted on the planning of the production of rolled metal products and steel pipe in adjusted tons. It seems possible by means of this measurer to evaluate more objectively the work of the manufacturers of products of a lower metal content. When determining the output of products in adjusted tons their actual amount in tons is multiplied by the coefficients of the labor intensity. The use of the latter equalizes the hourly productivity of production units and makes the output of products of the entire assortment equally profitable. The experiment has just begun, and its results must be analyzed thoroughly.

Yu. P. Frolov, deputy chief of a department of USSR Gosplan, devoted his speech to the measurers of the output of the chemical and petrochemical industry. In the national economic plan it is represented by 73 descriptions; moreover, 90 line items are approved by USSR Gosplan, while in all at the different levels of

management plans are drafted and approved for the output of more than 60,000 descriptions (and for approximately the same number in the industrial rubber industry). The existence of a large products list and relations which are becoming continuously more complicated require the constant improvement of the system of the physical indicators of output and the practice of their use.

Since 1 January 1981 the production and delivery of mineral fertilizers have been planned and taken into account with respect to the 100-percent content of nutrients. Before this the planning and accounting were carried out in conventional units, which did not characterize the amount of the produced useful product and did not make it possible to compare the production volumes.

Belt conveyors are the most prevalent type of continuous transportation for bulk and lumpy materials, which annually moves about 25 billion tons of freight (that is, approximately the same amount as motor transport). The belts for conveyors are produced with a specific area and strength; the latter is determined by the fabric and the number of its p es (layers). Moreover, until recently the production and distribution of belts were planned in square meters of the layers. In fact this indicator expresses the number of fabric layers, and not finished belts. Owing to the tendency for the assortment of technical fabrics of different density to increase, the decision was made to change over to the planning of the production of rubber fabric conveyor belts in square meters. An experiment, which showed that the physical indicator meets the requirements of producers and consumers and its use promotes the introduction of synthetic fabrics and decreases considerably the material intensity of production, preceded the introduction of the new indicator.

For the purpose of stimulating the production of artificial and synthetic filaments of a high count the question of the use in the planning for this type of products of the indicator "ton-count" instead of the existing indicator "tons" was examined. It was deemed inexpedient to abolish the existing procedure of the planning and approval in the national economic plan of the production volumes in tons and to change over to their planning in ton-counts for the following reasons. First, the indicator of the total production volume of chemical fibers and filaments disappears, since the production of filaments will be planned in ton-counts, while the production of fibers will be planned in tons. This will complicate the planning of the production of chemical fibers and filaments and the calculation of capacities and will eliminate the possibility of comparison with world statistics, which measures the production of chemical fibers and filaments in tons. Second, it is impossible to draw up the plan of the development of the chemical fiber and filament industry for the future in ton-counts. Third, the planning of the production of chemical filaments in ton-counts can lead to great miscalculations when determining the need for raw materials and materials for chemical filaments.

The decision was made to plan the production of chemical filaments in ton-counts at the level of the ministry. But this half-measure proved to be inviable. A compromise solution of the question was found: in the national economic plan the production of chemical filaments is to be approved in tons, while the Ministry of the Chemical Industry is permitted to make with the consent of the USSR Ministry of Light Industry the changes in the production plan, which are stipulated by the annual plans of USSR economic and social development, with the retention of the production volume of filaments in ton-counts.

The production of polymeric films at present is planned in tons and square meters. However, the activity of enterprises is evaluated according to the fulfillment of the plan in tons. Measures on the introduction at the end of the five-year plan of a basic indicator of the planning of the production of polymeric films--square meters--with the use of tons as an estimated indicator have been elaborated for the purpose of the economy of resources of polymeric materials. This will make it possible to increase the interest of enterprises in the production of thinner films, which are needed by many sectors of the national economy, and will promote the economy of resources of polymeric materials. Preliminary estimates show that in this way it is possible to save about 25,000 tons of polyethylene and polyvinyl chloride film.

The problem of the physical measurement of the volume of the production of output becomes especially urgent when preparing the national economic plan, in which the production volumes are determined, as a rule, according to the group products list.

In machine building, as M. M. Medvedev, chief of a subdepartment of USSR Gosplan, noted, dual measurers--quantitative and qualitative--have been introduced for a number of types of products.

Conventional measurers, which take into account the basic qualitative parameters of products, are being used in other sectors. A number of consumer goods (dishes, timepieces) are planned in rubles. Several new indicators (measurers) are being tested in the experiments being conducted. However, so far it has not been possible to solve completely the problem of meeting specific needs for products by means of the most perfect measurers. The so-called profitability of production, for example, is complicating its solution. USSR Gosplan should set up the monitoring of the fulfillment by ministries of the function assigned to them of meeting the specific needs of the national economy and the population for certain types of products or others. This is recorded in the statute on the ministry. It should also be investigated whether all types of products have been assigned to ministries.

M. M. Medvedev spoke further about the shortcomings of the measurement of consumer goods. The USSR Ministry of Trade does not always have enterprises make specific products and does not always supply stores with the ones they need. The mentioned ministry should not accept from enterprises of the manufacturing ministries un-ordered products. It is necessary to improve the work on the study of demand.

Attention should be directed to such a section of the plan as "The Standardization of Products." The methods directions of the improvement of standardization are indicated in it. The sectorial departments must set up special control over it. It is also possible to say this about the section of the plan "The Technical Level of Products"; it is necessary to think about the choice of its indicators.

A. G. Radchenko, chief of a subdepartment of USSR Gosplan, directed attention to the improvement of the physical indicator of the output of the pulp and paper industry. The production of paper and cardboard throughout the world is calculated in units of weight, in spite of the fact that in the overwhelming majority of instances their area is more important. In conformity with the state standard a square meter can weigh from 48.5 to 53.5 g. Possibilities of saving raw material resources lie in this. But the production technology is such that it is simpler and easier to produce paper with a greater weight than so-called thin paper.



The weight of 1 m<sup>2</sup> of paper is one of the basic qualitative indicators which determine its use value. The thinner the paper is, the more printed products the consumer receives. The scientific and technical achievements in the technology of pulp and paper production were the prerequisites for the decrease of the weight of 1 m<sup>2</sup> of paper and cardboard. The possibility and necessity of the economical consumption of material resources were dictated by production conditions and life itself. But the plan indicator "ton" stood in the way of a wise initiative--to make paper thinner.

Guided by the decree of the CPSU Central Committee and the USSR Council of Ministers "On Stepping Up the Work on the Economy and Efficient Use of Raw Material, Fuel, Energy and Other Material Resources" of 30 June 1981, for the purpose of stimulating the further decrease of the weight-to-volume ratio of paper and cardboard by enterprises which supply pulp and paper products, USSR Gosplan, USSR Gossnab and the USSR Central Statistical Administration established as of 1 January 1982 a new procedure of the planning and calculation of the fulfillment of the plan of the production of paper and cardboard. The planning of production (more than 81 percent of the volume) of specific types of paper and cardboard is called for in dual calculation (in square meters and tons). The new thing consists in the fact that enterprises, associations and the ministry are permitted to introduce in the statistical reporting for the types of products, which are planned in dual calculation, an additional indicator--the estimated planned ton. USSR Gosplan sets the production plan for the ministry in square meters and tons, on the basis of the planned weight of 1 m<sup>2</sup> of newsprint, for example, of 51.2 g, which is close to the nominal value according to the state standard and characterizes the level achieved during the preceding period of time.

The new measurers have the following merits. With the replacement of the mandatory plan indicator "tons" by the corresponding estimated indicator the opportunity appeared to evaluate objectively the efforts of the collective on decreasing the weight-to-volume ratio of products and on saving wood pulp and other material resources as the difference between the approved and estimated plan. The standard base of the consumption of material and other resources for the planned production volumes was retained. The use of the estimated plan indicator "ton" made it possible to interest all the workers at the enterprise and association in reducing the materials-output ratio. The opportunity appeared to change over to the production of thin paper as the technical and moral readiness of both the producers and the consumers of the products for this increased.

According to the estimates of economists of the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry, the purposeful implementation of the program of organizational and technical measures on the decrease of the weight-to-volume ratio of products in combination with a thought-out system of incentive measures of all the workers of the enterprises on the basis of the newly established procedure of the planning and calculation of the fulfillment of the production plan will enable the enterprises of the pulp and paper industry to save during the 11th Five-Year Plan not less than 10 million m<sup>3</sup> of wood, 260,000 tons of various chemicals, 3 billion kWh of electric power and 46 million gigacalories of heat.

It is envisaged by the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 to make changes in the system of physical measurers

of the output being produced on the basis of the extensive use of scientifically sound technical and economic indicators, which make it possible to take into account the efficiency, quality and other consumer properties of the output. Chief Specialist of USSR Gosplan N. A. Ignat'yev told how these instructions are being implemented in the construction materials industry. Thus, it is proposed to take into account the production of cast iron sewer pipes and the fittings for them in thousands of kilometers (and not in tons). What motivated such a change? The pipes are produced in three diameters--50, 100 and 150 mm. Pipes of first one diameter, then another have a greater demand. Adjustment of the plan at enterprises is not always possible, since the pipes differ in weight: pipes with a diameter of 50 mm weigh 11 kg, 100 mm--24 kg, 150 mm--39 kg. Consequently, in order to fulfill the plan on tonnage, which, what is more, has been made more precise in the specification of the client, it is necessary to have a reserve of equipment, areas and workers. For this reason it is more profitable for enterprises to produce pipes with a diameter of 100 mm, which encroaches upon the interests of construction workers. In this connection it is also proposed to take into account the production of pipe in thousands of kilometers. But how is one to take into account the fittings for pipes, which it is impossible to measure in kilometers? It was decided to single out by a separate line the total production volume of pipes and the fittings for them in thousands of tons, as well as of pipes with a diameter of 50 mm, which was done in the plan for 1982.

It is impossible to agree with the suggestion to plan the production of nonmetallic construction materials--crushed stone, gravel and sand--in a weight measurement instead of a volumetric measurement. The point is that the natural materials, which are converted into crushed stone and gravel, have a different density and the proposed unit of the physical measurer would distort the real picture of the operation of enterprises.

The suggestions on the planning of heating equipment--radiators, convectors and heating boilers--merits attention. The current measurer for the calculation of the heating surface of heating equipment in equivalent square meters was approved in 1957. At that time it stimulated the production of more perfect cast iron equipment, which provided the highest thermal effect and saving of metal. In the past decade the production of more efficient heating equipment--steel panel radiators and convectors--was begun on a broad front, the production of cast aluminum convectors is being assimilated. It has become technically difficult to use the old measures for determining the heat emission in new equipment. The need is arising to determine the heat emission of heating equipment not according to the heating surface, but with allowance made for the total heat (in watts).

The physical measurer for heating boilers is the conventional square meter, or the size of the heating surface. However, the user did not get enough of the necessary heat when using boilers, the efficiency of which did not exceed 62. The question arose of determining the heat output of boilers on the basis of the results of their operation using coal, as well as of increasing their efficiency. For this purpose some boilers were removed from production, others were modernized (or new types of them were developed). The production of hot water heaters with the automatic control of the fuel combustion processes, which makes it possible to maintain constant conditions and a constant temperature of combustion and to eliminate losses of fuel during the feeding of the fuel and the removal of ash, was begun. The heat output of the boilers increased. For this reason measurers, which

are used for the characterization of high-power boilers: gigacalories or megawatts, were proposed. The proposals on their introduction will be implemented after summing up the tests of the boilers.

G. Ya. Kiperman, chief of a department of the Scientific Research Institute of Planning and Norms, shared his views on the increase of the role of physical indicators in the planning and evaluation of the activity of production units. He noted that physical and value indicators are not interchangeable, and emphasized that, when speaking about the measurers of output, one must take into account how the increase of prices influences the increase of the technical level of items. If we take steps to increase the role of physical indicators and at the same time use value indicators instead of them, this will lead to the hyperbolization of the latter to the detriment of the physical indicators.

It is necessary to direct the efforts at finding the necessary physical measurers. Of course, there are such aggregated line items for which, perhaps, physical measurers will never be found. But these are very large line items; among them are items of series, at times even mass production. It is necessary to separate such items, if they can be measured in physical units, from the extremely aggregated line items which are planned in value terms.

Another question concerns the planning of production in sets. For the present the share of such production is increasing slowly. Apparently, it must be placed on a firm planned basis. USSR Gosplan and USSR Gosstat can determine jointly the proportion of the output, which lends itself to planning in sets, with respect to each sector. Let these be estimated indicators. USSR Gosstat is already using them--they amount to 12 to 20 percent for the sectors of machine building. An assignment should be established for each ministry for a 5-year period: to increase the production volume in sets to the estimated amount.

The introduction of new measurers is often delayed due to the fact that the preliminary work has not been performed. Apparently, a decision on their introduction is necessary at the level, for example, of the deputy chairman of USSR Gosplan.

Yu. S. Muntyan, chief of a subdepartment of USSR Gosplan, believes that the number of new measurers which can be introduced is very limited. Even with the enlargement of the products list it will be possible to reveal no more than five or six properties of products. It is difficult to take completely into account the use value of products, and in this sense the discrepancy between it and the value will always remain.

Which is better--to fulfill the plan with respect to the products list and not to fulfill the contract or to meet the requirements of the contract and not to fulfill the plan with respect to the products list? In the opinion of Yu. S. Muntyan, it is better all the same to observe the conditions of the contract. Precisely the indicator of the fulfillment of contracts should become the main measurer. How is this to be achieved?

The Ministry of the Machine Tool and Tool Building Industry is permitted to regard the assignments of the plan on casting in tons as estimated indicators, but to evaluate their fulfillment according to the fulfilled contracts. As a result a 5- to 7-percent saving of materials was obtained with the complete meeting of the

needs of consumers. In order to extend such a practice, it is necessary for arbitration organs to recognize the priority of consumers.

The machine builders have already done much work on the preparation of a uniform reference products list. The products list of machine building, which is to be calculated on computers, exceeds 9,000 descriptions. The possibilities of analytical calculation are increasing owing to the main computer center. This does not mean, of course, that it is possible to reflect the entire products list in the plan. The products list should be planned and uniform for all the subdivisions of USSR Gosplan.

In recent times the question of the final product has been acquiring great importance. The gross product, which today is planned and is specified in value terms, consists of two parts: the part consumed in the process of production and the part which goes beyond its sphere. The latter is precisely that for the sake of which we work. It is possible to increase the gross product by working only for oneself. Therefore an analysis if only on the basis of statistical records is needed. It is necessary to know what the ministry itself consumes and what it distributes as the final product outside it.

A. V. Bachurin summarized the conference. As a whole, judging from the statements, he said, in recent times the work on the improvement of the physical measurers of output has been stepped up in USSR Gosplan. However, not all ministries are devoting the proper attention to this. It is necessary to monitor more strictly this aspect of the activity of the ministries.

The experience of other socialist countries should be taken into account. In spite of the existing differences, even in the case of the sharp decrease in individual countries of the number of assignments being approved the production of the most important types of products in physical terms is being maintained as the main indicator. This is understandable, since on the basis of these indicators the balance sheet calculations are made, mutual obligations are determined and the evaluation of the quality of items is made.

The question of how to eliminate the discrepancy between the evaluation of the results of the fulfillment of the plan assignments with respect to the products list and deliveries in accordance with contracts requires additional discussion. If an enterprise increases the production of economical items, in a number of instances it might not fulfill the plan with respect to the main physical indicators, which have been approved for it, while having met at the same time the obligations to consumers. To what is preference to be given? Obviously, to the economy of physical assets and the complete filling of the orders of consumers. Consequently, the indicator of the fulfillment of deliveries in accordance with contracts appears in first place. Such a statement of the question is in keeping with the policy of the tightening up of contractual discipline and the extension of direct ties with consumers.

The increase of the attention to the use value is not confined to the approval of the assignments on the most important products list. The system of standards must be improved and steps on the development of direct economic ties, particularly in machine building, must be elaborated.



The consolidated list of items which are approved by USSR Gosplan also needs improvement. Life is making important adjustments in it, which it is not always possible to provide for in the approved indicators. With the increase of the number of the latter the probability of the limitation of the initiative of enterprises in the production of new, more efficient items increases. Therefore the role of physical indicators is also increasing at the level of enterprises, where physical assets are created.

The balance, especially at the national economic level, can be drawn up in accordance with consolidated indicators, but with respect to specific items the obligations arise between suppliers and consumers and are realized through the system of contracts and economic ties. That is why it is necessary to increase the attention to the use value first of all at the level of enterprises (associations). It is impossible and inadvisable to approve the entire products list in the national economic plan, especially when it is a question of the sectors of group B.

In the planning of the production of consumer goods, in spite of the steps which have been taken, oversights still exist. The demand for goods frequently changes, and this should be taken into account in the system of contracts, in order to produce in good time the products which the consumer needs. The plan of production should be drawn up on the basis of a thorough study of the demand.

The conference adopted recommendations in which steps on the improvement of the system of physical measurers were outlined.

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## INDUSTRIAL DEVELOPMENT AND PERFORMANCE

### SOCIALIST COMPETITION, FULFILLMENT OF 1982 PLAN

Moscow PLANOVVOYE KHOZYAYSTVO in Russian No 7, Jul 82 pp 35-39

[Article: "The Competition for the Fulfillment of the 1982 Plan Will Be Expanded"]

[Text] The CPSU Central Committee in the decree of 19 February 1982, "On the 60th Anniversary of the Formation of the Union of Soviet Socialist Republics," approved the initiative of the leading collectives of Moscow, Leningrad and all the union republics, which had launched socialist competition for the worthy greeting of the 60th anniversary of the USSR and for the successful fulfillment and exceeding of the plan of economic and social development for 1982 and the assignments of the 11th Five-Year Plan. The results of the development of the economy during the past months of this year show that the workers of our country are implementing with great political and labor activeness the decisions of the 26th CPSU Congress and the theses advanced by L. I. Brezhnev at the November (1981) CPSU Central Committee Plenum and the 17th Congress of USSR Trade Unions.

The workers of industry achieved appreciable gains. In spite of the existing objective difficulties, the plan for the first quarter of 1982 on the sales volume of industrial output was fulfilled by 101 percent. All the union republics, as well as the ministries and departments (except the USSR Ministry of Ferrous Metallurgy) coped with the fulfillment of the plan. As compared with the corresponding period of 1981 the rate of the production of output by enterprises of petroleum and chemical, construction and road machine building, machine tool building, the fish industry, as well as industry of Belorussia, Uzbekistan, Azerbaijan, Lithuania, Latvia, Kirghizia and Turkmenistan picked up speed. The plan on the production of gas, chemical fibers and filaments, machine tools, electric locomotives, motor vehicles, tractors, grain harvesters, instruments, automation equipment and computer hardware, televisions, leather footwear and other products was exceeded.

A new step was taken along the path of technical progress. During the first quarter industry assimilated the series production of 210 new types of industrial products and introduced 63 technological processes. The plan assignments on the automation and mechanization of production processes were completely fulfilled. A large amount of work was performed on the development and assimilation of advanced types of machines and equipment, instruments and materials.

The work on the development of automatic manipulators (industrial robots) was expedited. Since the beginning of the new five-year plan about 4,000 automatic manipulators have been produced and 2,500 have been introduced; their use increases

labor productivity and the shift coefficient of equipment by 1.5- to 2-fold and frees people from difficult labor.

In conformity with the plan for 1982 a large program of capital construction is being carried out. During the first quarter 23 billion rubles of state capital investments were allocated for the development of the national economy, fixed capital worth 10.7 billion rubles was put into operation. New production capacities in power engineering, for the mining of coal and the production of machine tools, chemical and other products began operating.

The policy of social development and the increase of the well-being of the people, which was adopted at the 26th CPSU Congress, is being consistently pursued. The average monthly wage of workers and employees increased by 2.4 per cent and came to 177.5 rubles. The retail commodity turnover came to 71 billion rubles, having increased as compared with the first quarter of 1981 by 3.5 billion rubles. Moreover, the delivery of foodstuffs increased during the indicated period by 3.3 billion rubles, or 7.2 percent. The deliveries of nonfood consumer items, including cotton fabrics, hosiery and knitwear, leather footwear and so forth, also increased. New apartment houses and other cultural and personal service facilities were built and put into operation.

Since the first year of the 11th Five-Year Plan our country has been achieving newer and newer gains in economic and cultural construction. The socialist competition of collectives of workers for the fulfillment and exceeding of the plans has always played an enormous role in the achievement of these gains. The number of participants in the competition comes to 108 million. This is a mighty force, within the power of which is the solution of the most difficult problems.

Socialist competition, at the source of which V. I. Lenin was, has become an integral, most characteristic trait of the Soviet socialist social mode of production. At present it has acquired a national scope and has encompassed all the spheres of social life, beginning with production and ending with culture. A broad field of activity has been given to the competitors. According to the plan for 1982 it is envisaged to increase the national income of the country by 13.4 billion rubles, or 3 percent; the volume of industrial output--by 30.4 billion rubles, or 4.7 percent; to increase agricultural output to 136.5 billion rubles, which is 10.2 percent higher than the average annual level of 1976-1980. The capital investments in the development of the national economy will come to 137.4 billion rubles.

Thus, even a short list of the basic assignments of the plan shows the truly enormous tasks which face the Soviet people during the current year. And socialist competition is called upon to play a decisive role in this. The main attention of the competitors should be focused on the increase of production efficiency and work quality, the intensification of the economy, the acceleration of scientific and technical progress and the achievement of high end results with the least expenditures of raw materials, materials, electric power, fuel, financial and manpower resources.

Socialist competition is the creative work of the masses. For example, many collectives of Moscow and Leningrad have been competing since the beginning of the five-year plan for the early completion of personal and collective plans. At the same time in Tyumen Oblast the petroleum and gas industry workers assumed the

obligation to increase the daily production of petroleum to 1 million tons and of gas to 1 billion m<sup>3</sup>. The collective of the Magnitogorsk Metallurgical Plant is striving for the maximum increase of metal and the increase of its quality, by improving the use of equipment and the organization of labor.

The textile workers of Ivanovo Oblast, who make one-fifth of all the fabrics produced in the country, are showing a good example of the drive for the intensification of production. The industry of the oblast for three 5-year periods now has been obtaining the entire increase of the production volumes by the increase of labor productivity with a decrease of the number of workers.

Meanwhile the proper increase of labor productivity is not being achieved in a number of sectors. During the first quarter of 1981 many enterprises of the construction materials and coal industries, ferrous metallurgy, light and the meat and dairy industry did not have an increase of output due to the increase of labor productivity. Labor productivity in the sectors of industry of Kazakhstan, Tajikistan and Estonia decreased as compared with the level of last year. At the same time in heavy, agricultural, construction and road machine building and the fish industry the collectives of enterprises obtained the entire increase of output by the increase of labor productivity.

In the Accountability Report of the CPSU Central Committee at the 26th party congress it was emphasized that the economy of material, manpower and financial resources should find reflection in the economical consumption of raw materials and materials, the reduction of scraps and the elimination of losses. This in the end will mean a saving of labor and capital investments. And it must be said that the leading collectives have gained positive experience in the economy of raw materials, materials, fuel and power with the simultaneous improvement of product quality. For example, purposeful work on the efficient and economical consumption of material, fuel and energy resources is being carried out by the competing enterprises of the Ukrainian SSR. During the first quarter of 1982 alone 70,000 tons of finished rolled ferrous metal products, 44,000 tons of cement, 69,000 m<sup>2</sup> of lumber, 500,000 tons of conventional fuel and 740 million kWh of electric power were saved in the republic. The procurement of secondary resources increased. In Kazakhstan for the purpose of supplementing the resources of raw materials for the production of nonferrous metals the competing collectives of a number of enterprises are performing much work on the increase of the extraction of metal when processing the raw materials and the increase of the utilization in production of the intermediate products of metallurgical plants. As a result at the Tekeli Lead and Zinc Combine several hundred additional tons of lead and zinc were extracted; at the Leninskogorsk Complex Ore Combine with the tailingless processing of cakes the extraction of zinc increased by 4.5 percent.

In industry of the country the maximum level of expenditures per ruble of commodity production during the first quarter of this year was slightly lower than the planned level. The above-plan saving from the decrease of the production cost came to 220 million rubles. At the same time the proper change in the improvement of the use of material resources has not yet occurred. The consumption of raw materials and energy per unit of national income in our country exceeds the best world indicators. Resource-saving technological processes are being used far from everywhere. The losses of material resources in the process of production and storage are still significant. Only by this is it possible explain the fact that with the



overall fulfillment of the plan assignments on expenditures one-fifth of the enterprises of industry did not fulfill the plan of the production cost of the commodity production and permitted the excessive consumption of assets. The enterprises of ferrous metallurgy, the petrochemical and chemical industries have the greatest increase of the production cost.

The CPSU Central Committee and the USSR Council of Ministers in the decree of 30 June 1981 on the economy and efficient use of material resources deemed it necessary to establish in the five-year and annual plans for industrial, transportation and construction ministries, associations, enterprises and organizations starting in 1983 assignments on the cost of production (operations), and within these assignments the limit (maximum level) of the material expenditures (in monetary terms) per ruble of production (operations). On the basis of these instructions the maximum level of expenditures starting in 1982 will be introduced as an evaluation indicator of economic operations.

The USSR ministries, the departments of USSR Gosplan, the Gosplans of the union republics and local planning organs should set up the monitoring of the practical accomplishment of the assignments on the decrease of the consumption of raw materials, materials, fuel and power, the decrease of waste products, the maximum recovery of secondary resources and the elimination of losses of various types, using extensively in planning practice the achievements of leading enterprises.

The workers of industry, transportation and communications are competing for the more efficient use of fixed production capital, that is, for the accomplishment of the key task of the plan for 1982 and the five-year plan as a whole. Great reserves of the increase of the volumes of the production of output lie in this. And the collectives, which are assuming obligations and are striving for the efficient use of operating production capacities and the early assimilation of new ones, are acting properly. For example, the collective of the Novomoskovsk Azot Association assimilated the rated capacity for the production of ammonia in 8 months as against 12 months according to the standard. The Cherepovets Ammofos Production Association shortened the period of assimilation of the capacity by one-half.

At the same time cases are being encountered, when the capacities of enterprises, which have been newly put into operation, are not being used economically. Thus, at the Chirkentshina Association the first section of the complex was put into operation in early 1982. The most modern equipment for the production of radial tires, which increases their durability by twofold, has been installed here. But the capacities are being assimilated unsatisfactorily, the unique equipment is idle due to incomplete manning. Due to this the country is failing to receive a significant number of tires for KamAZ's, ZIL-130's, agricultural machinery and passenger cars.

The decisions of the 26th CPSU Congress and the program of scientific and technical progress call for the elaboration of specific problems of the intensification of social production and the increase of its efficiency, the practical use of the achievements of science and technology. In our country there are many examples of the close collaboration and cooperation of science and production: ZIL, LOMO, Elektrosila and others.

In the Ukrainian SSR the work on the implementation of the program of the change-over of 1 million workers from manual to mechanized labor by means of the more extensive adoption in production of the achievements of science and technology and advanced know-how is being performed energetically. This measure will be completed first of all in the coal industry, ferrous metallurgy, machine building, as well as at enterprises at which primarily women are employed.

Much work in the area of the extensive use in production of the achievements of science and technology is being performed in the Latvian SSR. At the enterprises subordinate to the republic alone 58 new types of industrial products were assimilated during the first quarter.

Many such examples exist among the machine tool builders of Moscow. In conformity with the scientific and technical program they have drawn up the documentation for the production of a resetable line which is controlled from a programmable master controller with the automatic change of 22-26 spindle box units. The introduction of this line will increase labor productivity by 10- to 15-fold.

In the Accountability Report of the CPSU Central Committee to the 26th party congress it is noted that the 11th Five-Year Plan will be a serious test for construction workers. This is due to the need to increase the effectiveness of capital investments by the sharp reduction of unfinished construction and the utmost concentration of forces on the quickest possible placement into operation of enterprises which are capable of providing the greatest increase of output and eliminating bottlenecks. For now the activity of construction organizations is being evaluated not according to the spent assets, but according to the finished commodity production, that is, according to the plants, factories and housing which have been put into operation.

This year the conditions for the fulfillment of the entire start-up program have been created for construction organizations, since the plan of construction and installation work remained at the level achieved in 1981 and was better balanced with material and manpower resources. But already during the first quarter the main construction ministries--the USSR Ministry of Construction of Heavy Industry Enterprises, the USSR Ministry of Industrial Construction, the USSR Ministry of Construction and the USSR Ministry of Rural Construction--did not ensure the entire construction program, having decreased the performance of contracting operations by 5-6 percent as compared with the corresponding period of 1981. Such a lag is intolerable, taking into account that during the second half of the year 73 percent of the capacities envisaged by the annual plan have to be put into operation. The state of affairs requires the quickest possible improvement of the organization of the construction cycle.

In early May the CPSU Central Committee adopted the decree "On the Initiative of the Collectives of the Construction, Installation and Planning Organizations and Enterprises of Tractor and Agricultural Machine Building of Kharkov Oblast on the Launching in 1982 of Socialist Competition in Honor of the 60th Anniversary of the Formation of the USSR for the Early Fulfillment of the Plans of Capital Construction and the Assignments on the Placement Into Operation and Assimilation of Production Capacities and the Placement Into Operation of Housing, Cultural and Personal Service Facilities." The fulfillment of the socialist obligations will make it possible in 1982 to complete at the Kharkov Tractor Plant and the enterprises

of the oblast, which are affiliated with it, the assimilation of the rated capacities for the production of powerful T-150K tractors.

The party and soviet organs of Azerbaijan are performing much work on capital construction. During the first quarter of this year the plan of the placement of fixed capital into operation was exceeded by 6 percent, the level of the assimilation of construction and installation work increased by 2 percent.

Important tasks face the workers of agriculture.

The May (1982) CPSU Central Committee Plenum examined the question of the USSR Food Program for the period to 1990 and the steps on its accomplishment. The goal of the program is to reliably supply the population of the country with foodstuffs in the shortest possible time. It poses tasks which are different in time--long-term, intermediate-term, short-term and urgent. The last ones, it was indicated in the report of L. I. Brezhnev at the plenum, should now be placed at the center of our work. The Food Program should yield its first fruits this year. The socialist competition in agriculture should promote the fulfillment of the specific assignments envisaged in the five-year plan and the Food Program on the increase of the average annual production of grain, meat, milk, eggs, potatoes, vegetables, fruit and other products.

On 26 April 1982 the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee adopted the decree "On the Procedure of Tallying the Results of the All-Union Socialist Competition on the Occasion of the 60th Anniversary of the Formation of the Union of Soviet Socialist Republics and on the Measures of Encouragement of the Winners in This Competition." The decree deems it expedient to tally the results of the All-Union Socialist Competition in accordance with the fulfillment of the plan of economic and social development for 10 months of 1982 with allowance made for the anticipated fulfillment of the assignments and the counterplans and socialist obligations, which were assumed by collectives, for 1982 and since the beginning of the five-year plan. In accordance with the final economic results the winning collectives are awarded Challenge Red Banners of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee, diplomas and monetary bonuses. Those of them, which achieve high and stable indicators in the fulfillment of the counterplans and higher socialist obligations, will be placed on the All-Union Honor Roll at the Exhibition of USSR National Economic Achievements.

There is no doubt that the workers of our country will make new gains in economic and cultural construction and will honorably greet the 60th anniversary of the Soviet Union.

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IMPROVING STRUCTURE OF PLANS FOR AUTOMATING CONTROL SYSTEMS

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[Article by K. Glushchenko: "Improving the Structure of Plans for the Automation of Control"]

[Text] One typical feature in the automation of control is the rapid scientific and technical progress in this field. Two avenues can now be distinguished in the development of automated control systems [ASU's], namely automation of control on the basis of scientific-technical decisions, and use of new scientific and technical developments in ASU's. Naturally, in the latter case the indeterminate nature of the question of the saving of assets is very high; even negative results are possible. Nevertheless, quite rigid requirements are made on the efficiency of systems that are developed. During the 10th Five-Year Plan the normativ period for payback of capital investments in developing ASU's was established at 2.8 years throughout the national economy.<sup>1</sup> During the present five-year plan the transfer should be completed to the formation of economic incentive funds for the organizations developing ASU's as a function of the savings effected through the introduction of the systems (in particular, this kind of procedure has already been introduced in the organizations of the USSR Ministry of Instrument Making, Automation Equipment, and Control Systems).

These circumstances condition the tendency both of those who order systems and of ASU developers to make "traditional" decisions that provide an effect which although less than that of more progressive systems at least is more or less guaranteed. This is evidently one of the reasons, noted by many authors, why among automation problems, accounting and statistical tasks predominate while the proportion of optimization is low.<sup>2</sup> As a result, to some extent the rates at which the scientific-technical level of systems that are developed are being held back: in the final analysis the economic effect for automation of control is lower than the potential.

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1. See Yu.P. Lapshin. "Razvitiye avtomatizirovannykh sistem upravleniya v promyshlennosti" [Development of Automated Control Systems in Industry], Moscow, "Ekonomika," 1977, p 119.

2. See, for example, A.A. Modin. "Osnovy razrabotki i razvitiya ASU" [Bases for Research and Development of ASU's], Moscow, "Nauka," 1981, pp 23, 58.



Surmounting these shortcomings will promote an apportionment of the two above-mentioned avenues in plans for work on automated control: let us arbitrarily designate them production and experimental. The first consists of developing ASU's in various parts of the national economy on the basis of design decisions already made (which, of course, does not exclude a certain amount of experimental work) and aimed directly at improving the efficiency of social production. The content of the latter is to develop experimental systems on which new design decisions are studied and tested for the purpose of subsequent dissemination of the results achieved to other objects of automation, that is, the development of scientific-methodological projects to raise the level of automated control.

Naturally, the approach to planning in these avenues cannot be the same. The production avenue in control automation should be regarded as an organic part of a system of measures to develop production. In this sense it is the same as other avenues in technical progress (the introduction of new equipment, progressive materials and so forth), and the system used for its result indicators should reflect its influence on the final results of the activity of the corresponding sectors. With regard to the experimental avenue, by its nature it belongs to the category of scientific research work, and accordingly it is advisable to plan it within the framework of the plan for funding scientific research work, distinguishing the corresponding ASU's as experimental. For such systems, planning indicators for effectiveness can be only of a calculated nature and are determined by expert evaluations and not from normativs for efficiency. Because of the high degree of uncertainty of possible results from this work (increased production capacities, profit and so forth achieved through the application of the ASU's) it is inexpedient to consider them in other sections of the plan.

In order on the one hand to insure the necessary development rates for scientific-methodological project work and, on the other, to avoid any extreme inclination toward research work to the detriment of practical activity in improving control on the basis of automation, it is obviously essential to insure a reasonable relationship between investments for the production avenue and the experimental avenue. This can be done with the aid of an appropriate normativ. Another way is to define, together with the normativ coefficient for efficiency, the expenses involved in developing ASU's for individual systems as less significant than the coefficient of efficiency for costs as a whole in a sector.

Let us now turn to a consideration of the production avenue. Automation of organizational control is now planned as a section in the state plan "The Development of Science and Technology" (section 6) in part two of this section-- "The Introduction of Computer Equipment in the National Economy." Given all the advantages of the approach, it also has its shortcomings: the development of ASU's as means for improving the organizational-economic control of elements of the national economy is, as it were, spread among different avenues in the application of computers and is to some extent divorced from general planning to improve control of the national economy; the preconditions come about for shifting the stress from the organizational-economic aspects of the process to the scientific and technical aspects.

The ways that computers are used vary greatly: automation of scientific research, engineering computations, design work, control of technological processes and so forth. That all applications are contained within a single section of the

plan results from the standardized nature of the new equipment used. However, the problems that are solved are different. Whereas the development of ASU's for the control of technological processes and production [ASUTP] promotes technical progress directly in the production sphere, the organizational-economic ASU promotes it in the control sphere. ASUTP's are directed toward improving the productivity of technological installations, production lines and so forth, that is, they are of a local nature. Problems solved by automating organizational control are rather broader in scope. In the final analysis automation is directed toward the development of a unified state automated system as a means of insuring the optimal operation and development of the economy. The significance and long-term nature of solving this problem for the development of the entire national economy are quite obvious.

In many cases a comparison of the economic efficiency of an automated enterprise management system with that of an ASUTP indicates that it is more expedient to develop the latter. However, this is an evaluation from the viewpoint of current interests. The significance of an organizational-economic ASU is not exhausted with the economic effectiveness and its role and place in the total process of improving the management of the national economy are significant. Accordingly, planning the automation of organizational control jointly with other avenues in the application of computers as part of a single section in the plan as it were obscures its special role.

Moving the automation of organizational control to the "Development of Science and Technology" section of the plan objectively concentrates attention on the scientific-technical aspect of this avenue. This leaves an impression in sector organization of the planning and control of work on ASU development. In many sector ministries this work is guided by the technical administrations (directly or through the ASU departments they set up), and control automation is regarded as a technical rather than an organizational-economic problem.

The planning-and-economic administrations of the ministries are often kept apart from plans drawn up to develop ASU's, and as a result this is done to some extent independently of planning for production development, improving the economic mechanism in the operation of the sector, organizational structures and so forth. Here, the indicators for control automation are included in the plan for improving the sector just mechanically, without the necessary coordination between the measures and the indicators. In some cases compilation of plans for work on ASU development is entrusted to the main information-and-computing center of the sector, whose organizational-administrative isolation from the ministry apparatus leads to an event greater divorce between these plans and the planning of traditional avenues in the improvement of control.

These undesirable tendencies can be largely overcome if the position of the automation of organizational control in the system of sections of the national economic plan is altered. It is now expedient to include plans for work on ASU development in the section "Improving Control of the National Economy." This will make it possible to integrate work on all measures to improve control into a single, interlinked complex.

The role of the plan section "The Introduction of Computer Equipment in the National Economy" within the section "The Development of Science and Technology"

will change here. Within it, the avenues for the use of computer equipment (including the ASUTP) not connected with the organizational avenue will be planned. The subsection will include the required indicators for the automation of organizational control taken from the section "Improvement of Control," while those relating to the experimental avenue in ASU development will be taken from the plan for funding scientific research work. This will make it possible to get an overall picture of computer applications, which is essential for the planning and siting of production facilities.

Let us now turn to the system of indicators for the automation control plan. Indicators for plans for the introduction of computer equipment in the national economy are combined in the following groups: commissioning of computer capacities and computer centers; commissioning of ASU's and data processing systems; state capital investments for the introduction of computers; requirements for technical facilities, materials and specialist personnel; economic effectiveness of measures for the introduction of computer equipment. On the whole, the process of control automation is characterized sufficiently completely with this set of indicators; however, some development trends require an expansion of the set.

Costs on ASU development and introduction make up a substantial proportion of total development costs--an average of about 50 percent of capital investments for a complex of technical facilities.\* In the long term, as the transfer is completed to the use of collective-use computer centers as the main technical base of the ASU, the proportion of these costs will grow even more. Therefore, calculation in the plan only of direct capital investments does not give a complete picture of the effectiveness of control automation. It seems that it would be expedient to introduce an indicator for costs for ASU development and introduction as a calculation indicator, possibly in the section on funding sources. In terms of their economic essence, costs data are capital investment data. In this connection, the inclusion of this indicator in the plan will make it possible to assess more accurately the total (absolute) economic effectiveness of ASU development on the basis of the payback time calculated for complete on-off costs and not merely according to direct capital investments, as is done now.

The development of systems using collective-use computer centers as their technical base complicates the overall picture for the use of computer equipment; in particular, a number of ASU's in a certain sector may be oriented on collective-use computer centers relating to other ministries and administrations. Here, within the sector the indicator for the commissioning of computer capacities and computer centers will not reflect the commissioning of ASU's, while the balance of the requirements for computer capacities and their availability acquires a clear intersector character. This circumstance can be taken into account in the plan by adding to it indicators that reflect services for computer data processing offered by one sector to another.

The principles of collective use of computer equipment have already been realized in practice, although mainly in undeveloped forms such as the leasing of computer time using a courier system for moving data between the computer center and the

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\* Ye.P. Pogrebnoy. "Effektivnost' ASU" [ASU Efficiency], Moscow, "Nauka," 1979  
pp 59, 60

control apparatus. Thus, whereas, as a rule, in industry ASU development is accompanied by the acquisition of a computer for each system, for ASU's for construction organizations this is often not economically justified because of the specific nature of construction production. For example, in the ASU used in the Baykal-Amur Main Railroad Link construction organizations, whose control apparatus is located in Tynda, use is made of the computer center in that city as a technical base relating to the USSR Ministry of Railways. Thus, the question of taking into account intersector use of computer capacities is already urgent.

A significant part of the work on ASU development in the sectors is being done by external, specialized organizations, mainly the organizations of the USSR Ministry of Instrument Making, Automation Equipment, and Control Systems, which have developed about one-fourth of all ASU's within the country. In the existing system, of plan indicators, account is taken only of the numbers of specialists associated with ASU development and the use of computer equipment directly in the corresponding sectors. In order to insure a balance between sector plans for control automation and the opportunities for "external" developers in draft plans presented to the central planning-and-economic organs, it would be desirable to determine the requirements for scientific-technical services in ASU development completed by other sectors (expressed as costs and, if possible, labor input). In the plans these indicators will act as limits for the sectors making use of these services.

The degree of the directive nature in indicators plays an important role in organizing plan fulfillment. The problem is, on the one hand, to insure the necessary influence on control automation to enhance the efficiency of social production, and on the other, to restrict as little as possible the opportunities for displaying economic independence by sectors and maneuvering during the course of meeting plan targets.

The basic indicator characterizing the results of control automation in an integrated way is total profit growth (P) achieved across an entire planning period, given that the systems envisaged in the plan are functioning. In our opinion, it should also be the main directive indicator for the plan. Here, however, there is one important problem. Growth dynamics for this indicator are fixed in the plan by means of a year-by-year spacing. If any lagging is permitted in the plan in a given year, it can be made up in subsequent years and the planned profit growth for the five-year plan as a whole will be achieved. But this result is nonequivalent in terms of the result initially planned, because the same volumes of profit growth obtained at different times are not equally significant economically. In accordance with the theory of the effectiveness of capital investments, their commensuration is effected by means of deriving it for one moment of time, let us say at the start of the planning period, and by dividing for the coefficient of commensuration as  $(1 + E_{cn})^{t-1}$ , where  $E_{cn}$  is the commensuration normativ and  $t$  is the year of the planning period.

Evidently it is expedient to confirm in the plan not the direct total profit growth by years over the planning period, but a "commensuate" growth: the total of annual growths set against the first year of the planning period. In this case, with a lagging in a given year of  $\Delta P$ , to eliminate it in the following year, profit growth must be increased not by  $\Delta P$  but by  $\Delta P(1 + E_{cn})$ . Possibly both magnitudes--direct total profit and commensurate profit growth--could be confirmed in the plan.



With regard to the components of profit growth and the factors insuring profit (reduced prime costs, increased production capacities, reductions in the numerical strength of the labor force, improved labor productivity and so forth), in our opinion, they should be calculation indicators. Here, only those indicators for costs for increasing production capacities, the numerical strength of the labor force and others common for sectors would be confirmed in the appropriate sections of the plan, taking into account the effect of control automation. This will make it possible to offer the sectors greater freedom of maneuver during the course of plan fulfillment depending on the situation actually prevailing.

In order to insure the necessary level of economic effectiveness from control automation costs it is inexpedient to plan the entire volume of one-time costs for ASU development. If the redistribution of volumes of direct capital investments and other elements of one-time costs among the different avenues of technical progress remains within the competence of the sector this will create the prerequisites for their more flexible and effective use. It will be necessary to confirm only the total sector limit on capital investments (and on other kinds of one-time costs taken into account in the plan), while the volume of costs on control automation will be a calculation indicator. The same can be said of the numbers of specialists associated with ASU development and the utilization of computer equipment.

The above, however, does not relate to that part of capital investments that is allowed for in the plan in the material-physical section (computer equipment by types, peripherals and so forth). Confirmation of the corresponding indicators (obviously as limits) is essential in order to insure an intersector balance in the production and distribution of this equipment. But the possibilities for redistribution of computer equipment in the different avenues of its utilization are quite restricted because of the differences in requirements (for example, for an ASUTP and an organizational-economic ASU, different types of computer are required). Accordingly, limits on the corresponding types of computer equipment logically include indicators confirmed for the automation of organizational control. From the above it also follows that indicators for the use of services for ASU development and data processing offered to a given sector by external sectors relative to its economic elements, will also be confirmed as limits.

Shortcomings in the numbers of ASU's developed as confirmed indicators have been analyzed in detail in the literature. The basic shortcoming is that the indicator is inaccurate in characterizing the scales of work on control automation. Experience shows that orientation on the development of a specific number of ASU's can lead to extensive development in a given direction of scientific and technical progress to the detriment of achieving maximum effectiveness. Therefore, it is expedient to have in the plan an indicator for the number of systems only as a calculation indicator.

And, finally, measures to automate control and their indicators envisaged in comprehensive national economic programs and in programs to solve the most important scientific and technical problems should undoubtedly be directive measures.

This review of matters by no means exhausts all aspects of the problem of improving plans for the automation of organizational-economic control. A number of the points

raised in the article are debatable. Accordingly, in the author's opinion, further discussion of the problem dealt with will promote the development and clarification of approaches to solving it.

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